

# MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Commercial, Railroad,  
Mining, Contracting, Engineering, Building, and General  
Business Interests of the South and Southwest

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## Dual Position of American Railroads

By President Daniel Willard of the Baltimore & Ohio Railroad

Now that it has come to be generally recognized that there is a very distinct and intimate relationship between the total economic cost of transportation and the rates which must be paid, the public should be furnished all of the information that is necessary to enable it to judge whether the railroads are being prudently and wisely managed. Full publicity concerning all matters of policy and management, including the raising and expenditure of new capital, will go far to insure honesty and to prevent discrimination, and no stronger motive for efficiency can be found than the natural desire for larger profits which, of course, will obtain, and properly so, with private ownership, but will be entirely lacking under Government ownership.

Those who manage the railroads should realize, as I believe they do, that they occupy a dual position—that of semi-public officer and also that of trustee for the owners of the property of which they are in charge, and that in the end they will best fulfil the function of trustee by giving adequate and satisfactory service to the public.

To my mind if there is any one thing distinctively American of which we should all be justly proud, it is our railway system, because, notwithstanding all that may be said against it, the fact remains that it has paid the highest wages and sold its output—that is, transportation—at the lowest price, and at the same time has furnished more transportation per dollar invested in facilities than any other country in the world, a record, I repeat, of which we should all be justly proud.

BALTIMORE, MARCH 25, 1915



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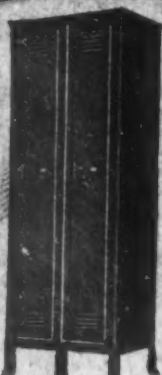
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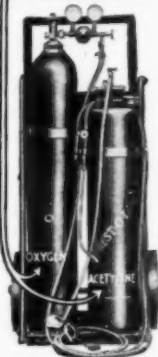
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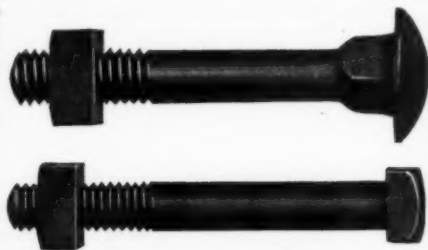
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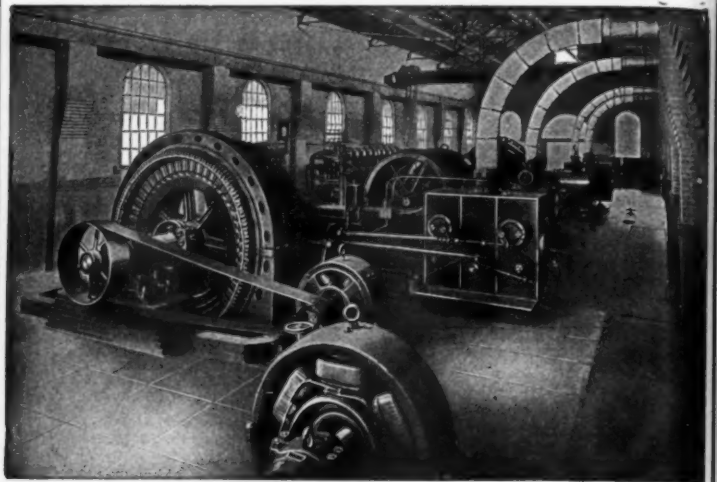
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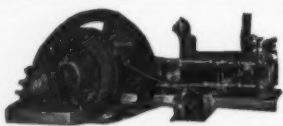
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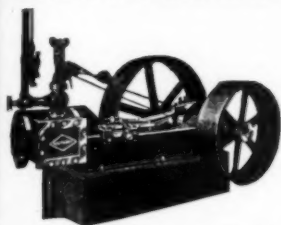
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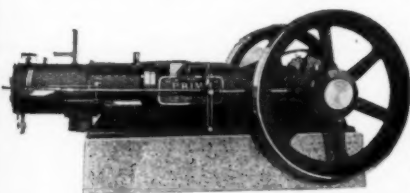
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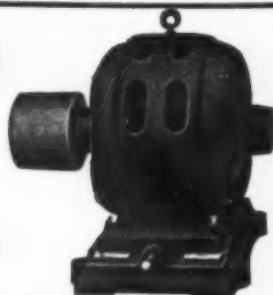
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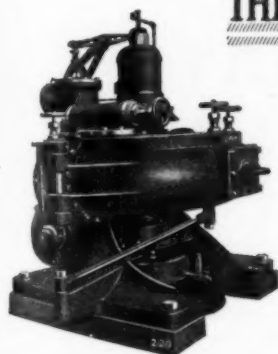
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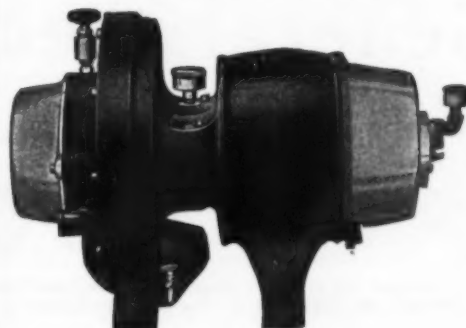
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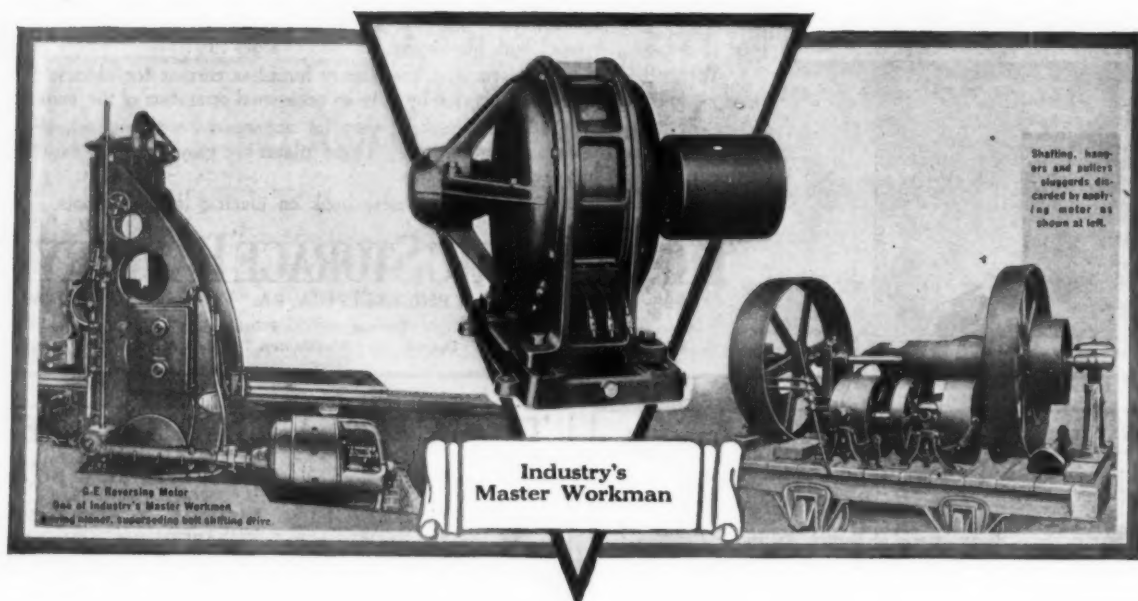
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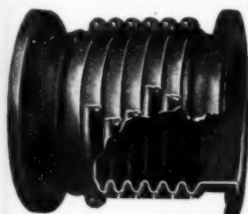
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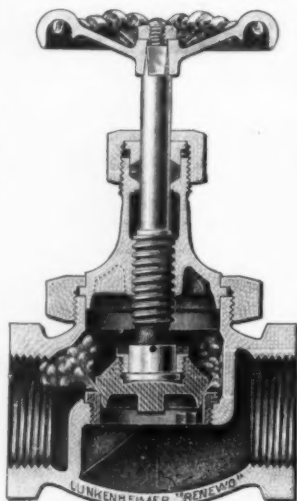
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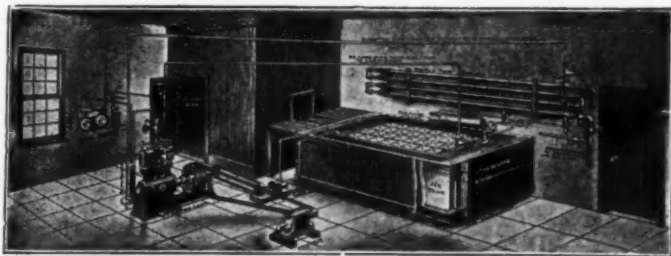
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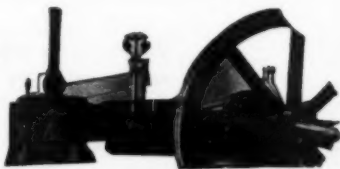
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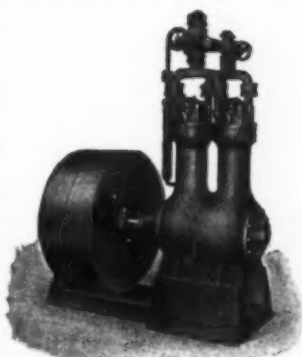
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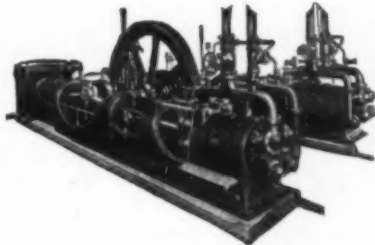
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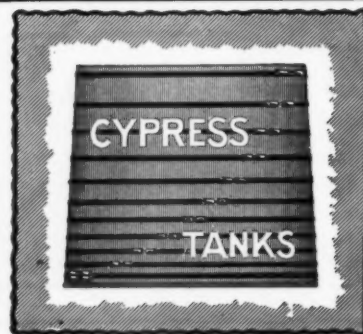
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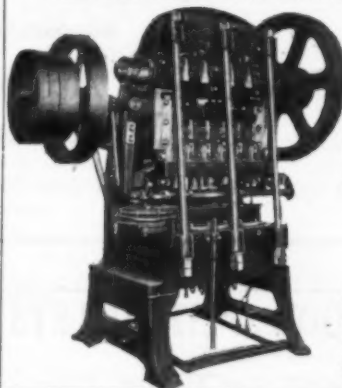
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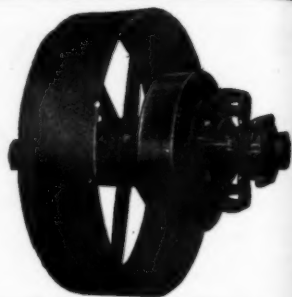


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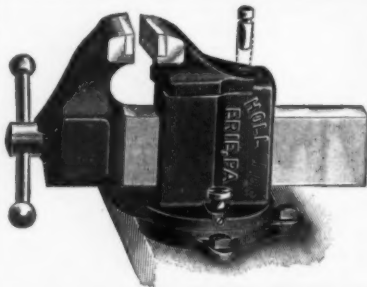
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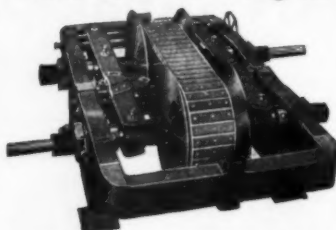
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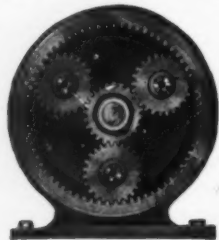
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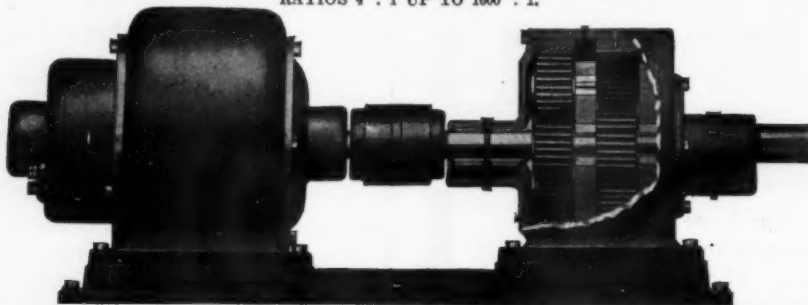
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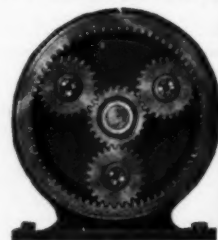
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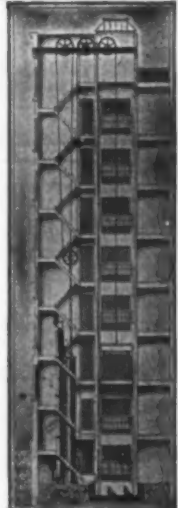
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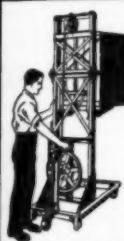
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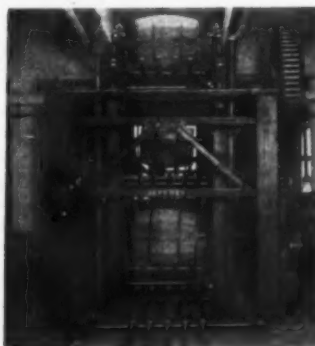
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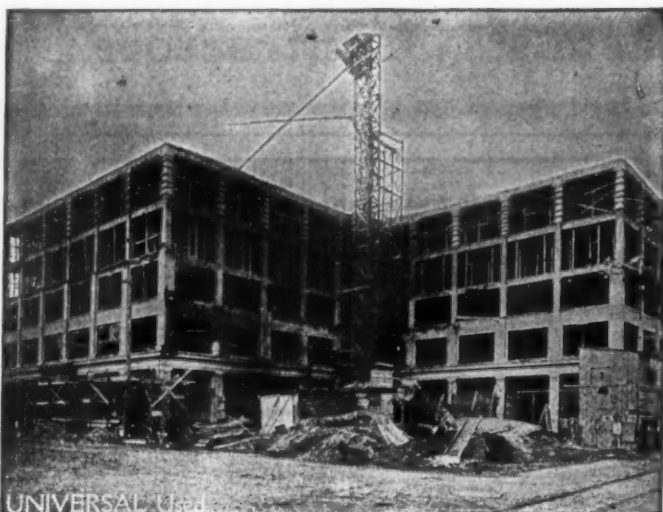
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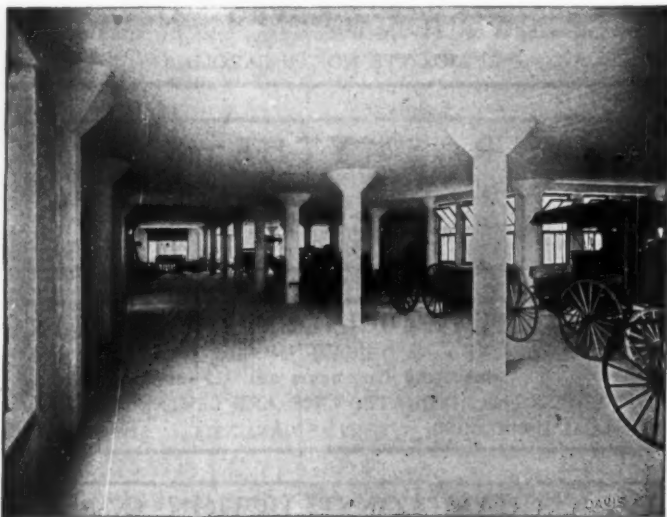


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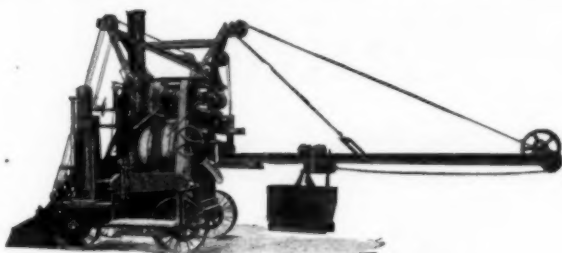
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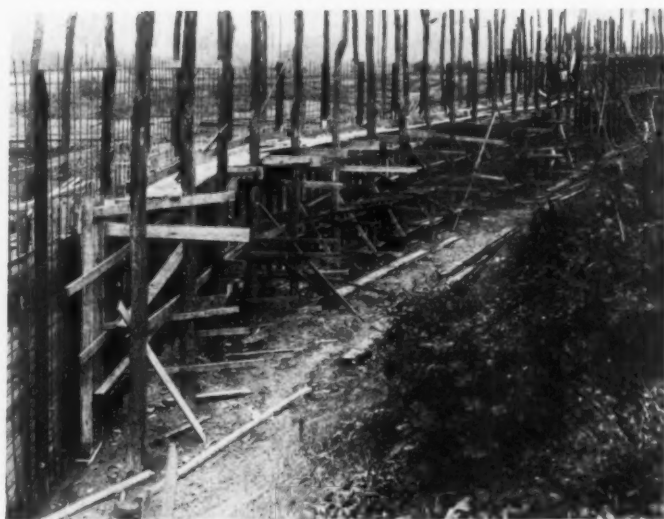
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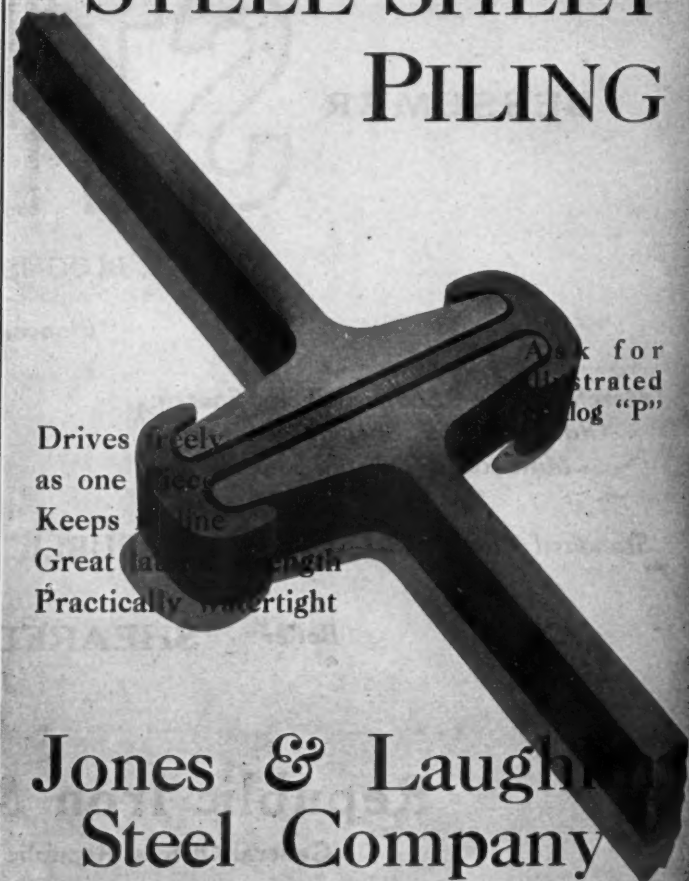
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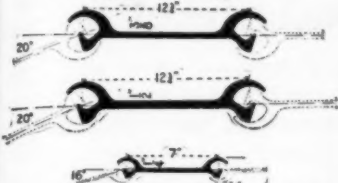
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## Types and Sizes of Lackawanna Steel Sheet Piling

The following sections offer types and sizes to economically meet any sheet pile construction problem:

### Straight-Web Type



Suitable for general work and especially constructions requiring high tensional and compressive resistance of the pile section. The smallest size is much superior to wooden sheeting in sewer and trench work.

### Plate Type



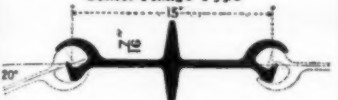
For light cofferdams, permanent work in cut-off walls, core walls, trenches, etc.

### Arched-Web Type



Preferable where transverse strength of the pile is of primary importance, as in braced or tied constructions. A wall of this piling is very thin in proportion to its transverse strength, having no greater thickness over all at the centers of the arches than the over-all thickness of the interlocked joints. Flattening the back of the web furnishes a long, straight contact with the waling timbers.

### Center-Flange Type

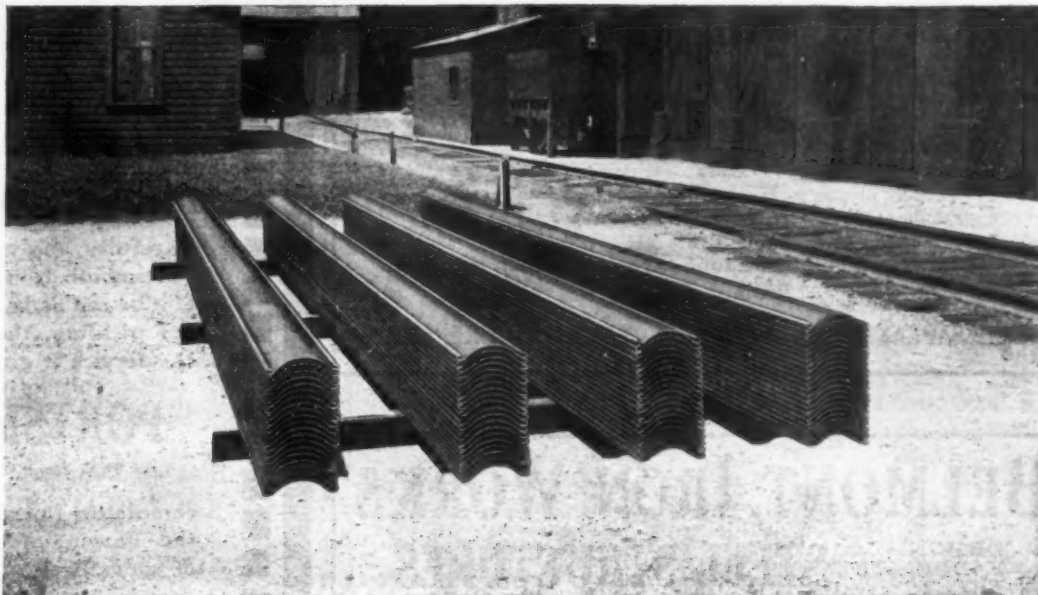


For constructions requiring high tensional and compressive strength, in connection with a fairly high transverse strength. The center-flange acts as a stiffener, increases the section modulus and furnishes means for attaching transverse ties, braces, etc.

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3. Where transverse strength of the sheet piling is secondary, due to material remaining in position on both sides of the wall and neutralizing the lateral pressures.
4. Where high resistance against the passage of water through the interlocked joints is essential. This of course implies a joint strength sufficient to assure installation of the piling wall without the opening or disarrangement of the joints.

5. Where the sheet piling must resist rotting action of the teredo and other influences which would make timber sheet piling constructions short lived. Steel plate sheet piling, if carefully painted, affords a permanent construction well able to resist any ordinary corrosive action from earth, water or moisture.

From the above it is evident that the Lackawanna Plate type of sheet piling is especially desirable for permanent work in cut-off walls under levees, for core-walls in earth dams and embankments and for cut-off walls underneath masonry foundations where the latter are constructed in saturated soils. In general this type of steel sheet piling will demonstrate economic structural advantages in installations where a permanent impermeable wall of very light weight is required to prevent the passage of water.

Our new Bulletin No. 107 explains Lackawanna Plate Sheet Piling in detail. Send for your copy.

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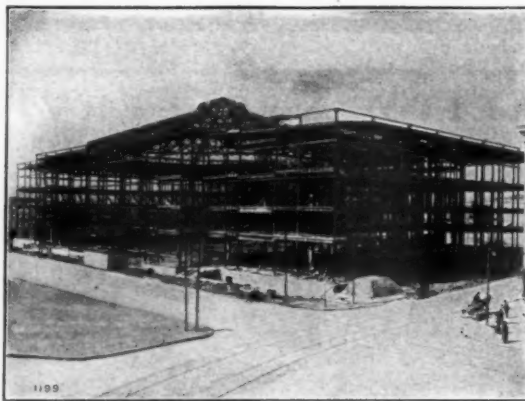
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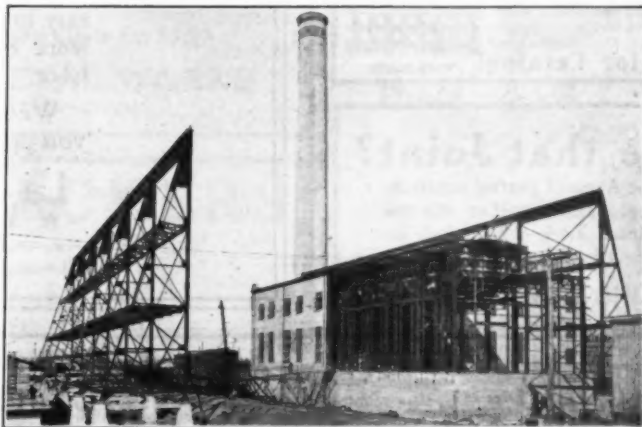
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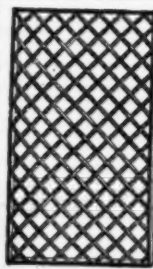
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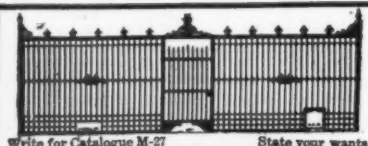


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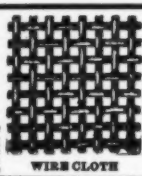
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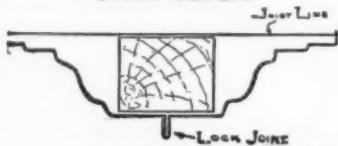
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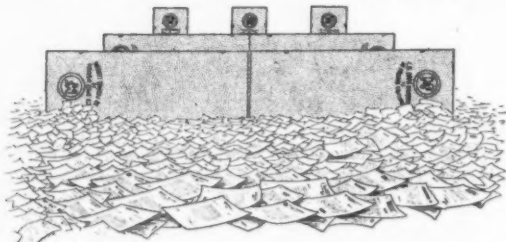
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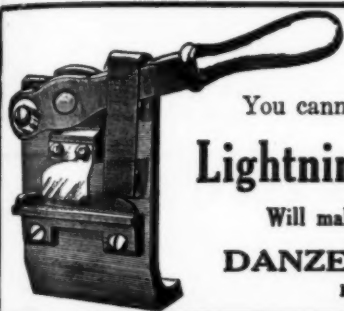
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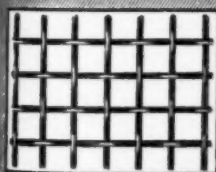
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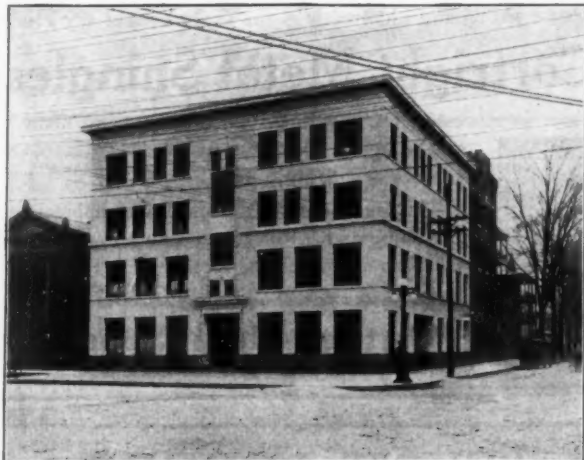
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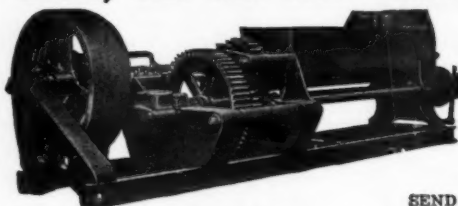
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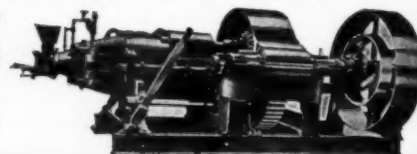
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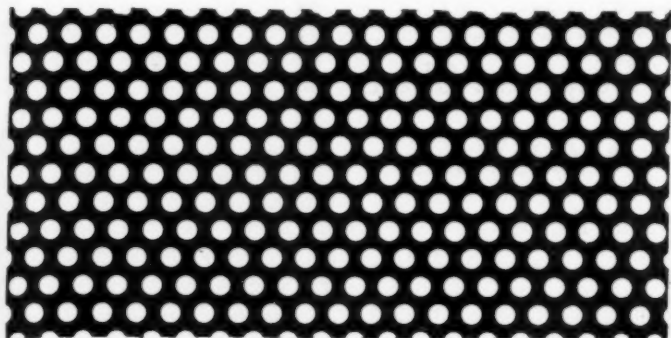
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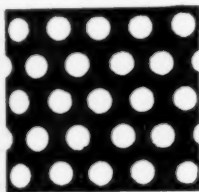
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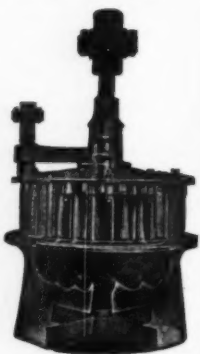
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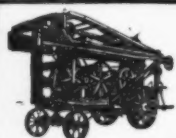


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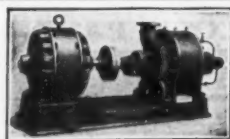
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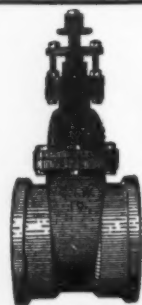
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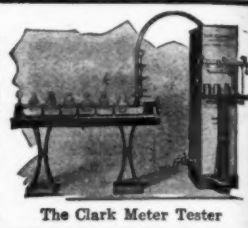
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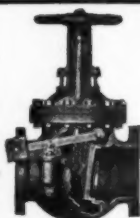
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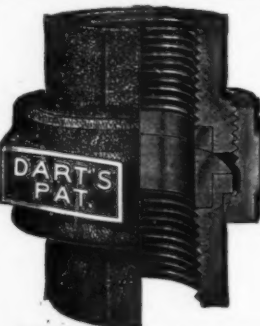
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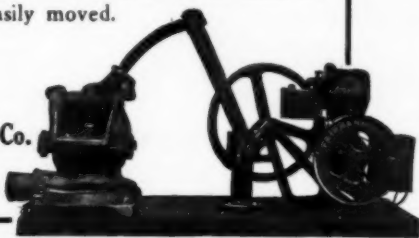
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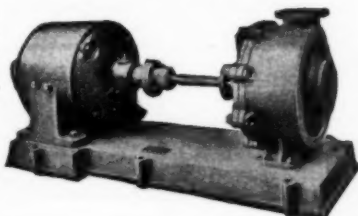
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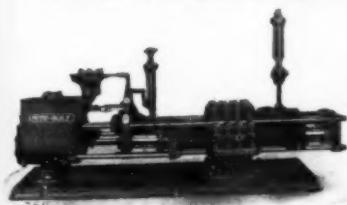
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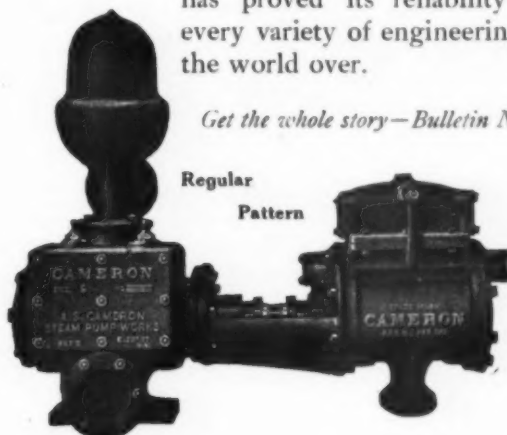
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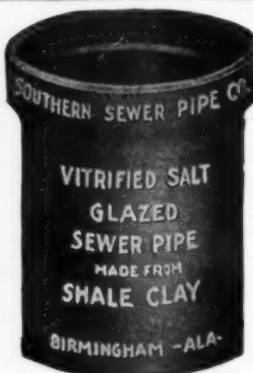
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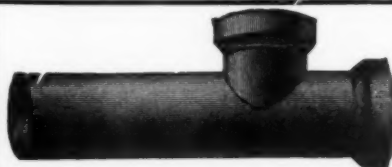
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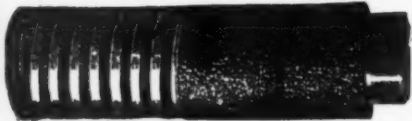
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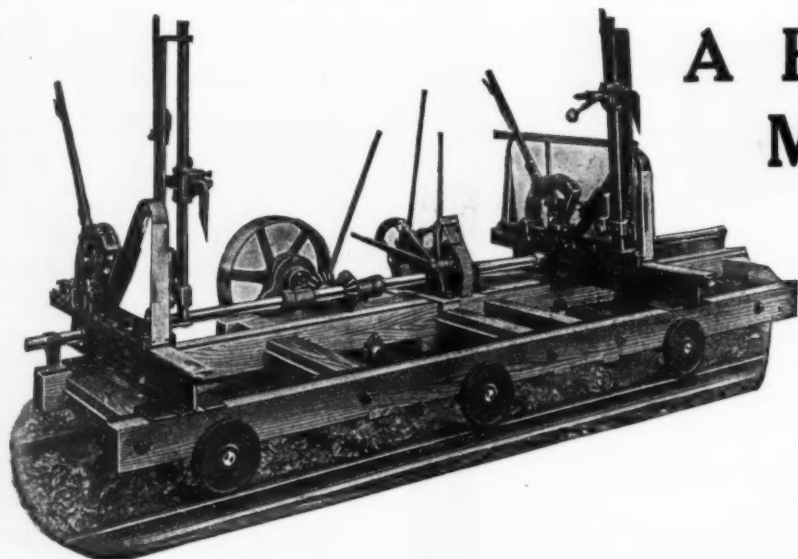
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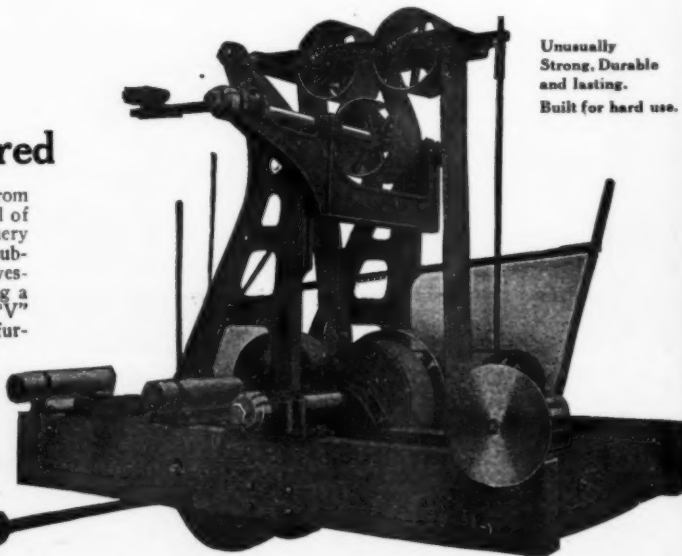
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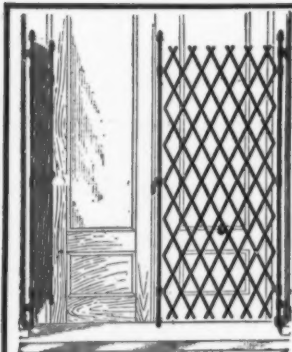
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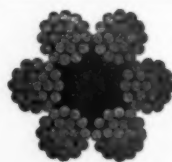
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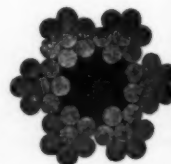


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A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

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## CHEMISTS AND THE SOUTH.

IN selecting New Orleans as the place for its fiftieth annual meeting next week the American Chemical Society emphasizes the importance of the South as a base in this country for chemical industries and makes an opportunity for its members to study the great potentialities of that section in that respect. An outline of the program for the meeting, largely a review of the achievements of the chemists on applied lines, touches a number of topics in which the South is vitally concerned. The papers will deal with contributions of the chemist to the wine, the copper, the corn products, the asphalt, the cottonseed oil, the cement, the sugar, the incandescent gas mantle, the textile, the fertilizer, the soda, the leather, the flour, the brewing, the preserved foods, the potable water, the celluloid and nitrocellulose, the glass, and the pulp and paper industry. Only a glance at that list suggests the deep interest of the South in it. But it happens that the South, so generously equipped by Nature with materials for applied chemistry, has made comparatively little progress in developing what may be termed strictly chemical industries.

What is that equipment? Take sulphuric acid, for instance, elemental in most chemical enterprises. Within a few miles of New Orleans are unmeasured deposits of sulphur which, by means of a process successfully worked out about twelve years ago, is brought to the surface in liquid state and about 97 per cent. pure, without a human motion underground. It is not surprising that when this resource became available the Sicilian industry, that had dominated the world's markets, was threatened with demoralization or that imports of sulphur to the United States have been brought down to a minimum, and will probably become even less when the Panama Canal is used in shipping the product of Louisiana and Texas to the Pacific coast to supplant that from Japan. Hardly 20,000 tons of sulphur are used directly in the derivation of sulphuric, the greater quantity of the acid being obtained from pyrites. But of the native pyrites so used more than half is mined in the South, principally in Virginia. The South, too, presents at Ducktown, Tenn., an illustration of chemistry applied to the disposition of annoying waste in fumes from copper reduction in the derivation of sulphuric acid.

Louisiana has its vast deposits of rock salt, too; its petroleum and its natural gas, sharing in production of the latter two with West Virginia, Kentucky, Missouri, Oklahoma and Texas. Historic Saltville, in Southwest Virginia, once a main source of supply of salt, has become a center of production of valuable chemicals derived from the salt wells. Natural gas in West Virginia and Oklahoma has become a source of gasoline, and, in the first-named State, of lampblack. In North Carolina has begun a real-

ization of the economy in hydro-electric energy in the fixation of atmospheric nitrogen and in the derivation of metal aluminum from bauxite. Practically all the native bauxite thus used in this country is mined in four Southern States.

The cottonseed-oil industry, grown in value of output in thirty years from 7,500,000 to \$150,000,000, as far as primary products are concerned, is one of the most dramatic facts in the history of American industry. But hardly a beginning has been made in the South, the seat of this great business, in manufacturing the fifty or more diversified products of the oil, the cake, the hulls and the linters. Successful demonstration has been made of the industrial possibilities in the wastes of lumbering operations as material for paper or for valuable chemicals, and an increasing number of batteries of retort ovens in coke making are emphasizing the value of by-products of that industry. Ceramics, glass making and Portland cement engage the attention of chemists in the South, and they are contributing more and more to the advancement of the textile industry to higher planes. The contiguity of phosphate rock, produced almost exclusively in the South in this country and in sufficient quantity to warrant exportation of nearly 40 per cent. of the annual output; of cottonseed and other elements accounts for the centering in the South of fertilizer manufacturing.

In all of that chemistry is a prime factor. But it has not gone far enough. Taking the figures of the 1910 census as indicative, it appears that the annual value of the output of strictly chemical industries in the South is \$4,953,000, while those in which chemistry has more or less importance are represented by a value aggregating more than \$700,000,000. They include cotton goods, \$234,891,000; cottonseed oil and meal, \$130,762,000; fertilizers, \$65,524,000; sugar refining, \$63,775,000; malt liquors, \$57,066,000; distilled liquors, \$54,163,000; leather, \$38,974,000; medicines and drugs, \$24,530,000; ice, \$20,437,000; coke, \$19,408,000; glass, \$11,492,000; paper and wood pulp, \$11,203,000; pottery, etc., \$11,073,000; paint and varnish, \$10,533,000; soap, \$4,719,000; wood preserving, \$1,078,000; lampblack, \$596,000, and wood distillation, \$138,000. The aggregate value of the output of these industries is 24 per cent. of the value of the products of all Southern factories. What a small proportion of the whole is the value of the output of the purely chemical industries!

It is believed, however, that the persistent and widespread agitation of the subject of our latent resources for chemical industries induced by the embarrassments of the earlier stages of the foreign war will have practical effect in the South of stirring capital and energy to greater efforts than ever before for a full utilization of the vast opportunities of that section. Certainly the meeting of the American Chemical Society at New Orleans will serve to fasten the attention of the South and the rest of the country upon this important subject, and it ought to encourage Americans to apply the lessons of European experience in industrial lines to the task of reaching a position of virtual independence of other lands, while at the same time developing our native resources.

## THE VITAL QUESTION IN COTTON.

WHAT are the cotton growers of the South going to do with 3,153,000 bales of the 1914 cotton crop, which have not yet come upon the market?

It rests with them largely whether or not the cotton in their hands is to bring a price equal to that at the close of the markets last Saturday or even a greater price, perhaps. If in planting this year's

crop no material reduction in acreage from that of last year be made, growers may be reasonably assured that prevailing prices for the staple will not be maintained, and that the new crop will be likely to enter greatly depressed markets. Hundreds of thousands of the growers, as the MANUFACTURERS RECORD has pointed out from time to time, have hardly been really free agents in determining the acreage to be planted by them. The real determining influences have been the interests to which so many growers have looked for the wherewithal to make their crops. Whether experiences of the past six or eight months have sufficed to lead to a modification of their policy by those influences remains to be seen. But it is a fact that unnecessary projection into the next marketing season of conditions in the cotton-growing industry for which these influences are largely responsible, regardless of foreign war or other disturbances, must seriously affect a large portion of the South to its detriment, in which the influences must share.

At many points in the South are indications that there will be a decrease in cotton acreage this year, in some cases because of the exercise of individual wisdom turning to the raising of grain or other crops, and in other cases because of dire necessity—the inability to obtain the means for making a cotton crop. To what extent this reduction will be made is still a matter of conjecture. But within a few weeks a fair estimate will be possible. Upon that estimate will turn the actual amount of money received by the growers for their crop of 1914, if not the amount which they will receive for their 1915 crop.

As of December 1, 1914, and based upon the farm price per pound of cotton at that date, the National Department of Agriculture estimated that the 1914 cotton crop was 15,966,000 bales of 500 pounds each, valued at \$519,616,000. The Department's estimate as of last Saturday, excluding linters, is 16,102,143 bales, and an unofficial estimate of the value is \$570,000,000. The production by States in 1914 compared with production in the preceding two years is shown in the following table:

	1914.	1913.	1912.
Alabama .....	1,750,281	1,495,485	1,342,275
Arkansas .....	1,015,674	1,072,846	792,048
Florida .....	80,963	58,695	52,700
Georgia .....	2,713,470	2,316,001	1,776,546
Louisiana .....	447,861	443,821	376,096
Mississippi .....	1,244,703	1,310,743	1,046,418
Missouri .....	81,587	67,105	55,691
North Carolina...	925,233	792,545	865,653
Oklahoma .....	1,261,350	840,387	1,021,250
South Carolina...	1,524,595	1,377,814	1,182,128
Tennessee .....	382,431	379,471	276,546
Texas .....	4,584,933	3,944,970	4,880,210
Virginia .....	25,182	23,490	24,398
All others .....	63,880	32,513	11,402
United States...	16,102,143	14,156,486	13,703,421

The linters, that is, the short fiber obtained in delinting cottonseed, were 791,464 bales of 500 pounds each, or 152,503 bales more than in 1913 and 181,870 bales more than in 1912. In view of the increased demand for linters, basic in the manufacture of high explosives, their value may be disregarded in estimates of the main cotton crop set forth in the table.

Whether or not the present estimate of \$570,000,000 as the value of the 1914 crop is to be discovered eventually to be an underestimate depends largely upon this year's planting. It may be recalled that the Government's estimate as of December 1, 1913, of the value of the cotton crop of that year was nearly \$62,000,000 less than the Government's final valuation of that crop. Developments since December 1, 1914, have changed to a marked degree the basis for an estimate of the total value of the crop of 1914. In the estimate the number of bales has increased by 136,000, and at the same time there

has been an advance in the price of the staple, all tending to modify the densely gloomy outlook of last fall upon the situation. This is recalled by an objection that has been raised by one of our correspondents to a statement made in our issue of March 11 to the effect that the net or absolute loss to the cotton grower of the South on the 1914 crop might be less than \$50,000,000. That statement was made in an article submitted to us for publication. The critic of it believes that the loss will amount to \$480,000,000.

We believe that if the estimate of \$50,000,000 loss errs toward underestimation, it goes no farther in that direction than the error in overestimating the loss at \$480,000,000. Someone based last fall an estimate upon the size of the crop and the prices then prevailing of a loss of more than \$420,000,000, or rather, as we remember, that much difference between the returns from the 1913 crop and those from the 1914 crop, which did not mean net loss. By net loss we understand the difference between what the crop cost the farmers and what they will receive for it. The Government estimate of the value of the crop of 1914, made as of December 1, when but less than 32 per cent. of the crop had been marketed and the farm price was 6.8 cents a pound, was \$520,000,000. That was \$367,000,000 less than the returns for the 1913 crop. But since December 1 there has been a marked change for the better in the cotton markets, and we believe that the portion of the crop sold to date has brought probably \$450,000,000. Between 3,000,000 and 4,000,000 bales are yet to be sold. Should only current prices prevail—and with wisdom in planting this year that end can be approached—at least \$160,000,000 would be added to the total value of the crop, bringing it up to \$610,000,000, or \$277,000,000 instead of \$420,000,000 less than the value of the 1913 crop. The net loss to the growers will be the difference between the value of the crop and the aggregate cost of making it—a loss much less, we believe, than the difference between the values of the two crops.

We hope that final results will show greater returns for this year's crop than at present indicated. It is hardly safe, though, to attempt any reliable forecast, even at this late date in the season. Practically everybody has his own viewpoint and his own method in making such an estimate, but we believe that hardly anyone, in studying the present cotton situation in the South and in drawing deductions therefrom, is inspired by any feeling but one of sincere interest in the welfare of the South, regardless of personal aims. For that reason it would be well if every cotton grower could read and ponder upon the following, in Cotton, published at Manchester, in the heart of the cotton-buying and cotton-manufacturing region of England:

Increasing interest is being evinced in the preparations for the next American cotton crop, and farmers will very long have to decide the acreage problem.

No amount of figuring will dissipate the supplies, whether "hidden" in America, contained in the visible supply or held by spinners, and it is asserted that unless an acreage much below last season's is placed under cotton, the effect upon values would be a depressing one.

In several States an important decrease compared with last season is predicted; for instance, in Alabama it is claimed that this will be 40 per cent. In other States the decreases are not likely to be nearly so drastic.

There seems little doubt that the increased cost of food supplies will be an inducement to the farmers to attempt to grow a greater part of their necessities. Then, purchases of fertilizers, owing to the restriction of credit to the farmer, will be much below last season. Also it is believed that there will be a shortage of mules.

No official report on the acreage, however, is due until July, and between now and that date there is time for the present disturbed political situation to change.

#### SOUTHERN SOIL POSSIBILITIES.

AT the last meeting of the State Board of Agriculture of Virginia it was announced that Bert Haines, a truck grower of Norfolk county, sold last year \$12,000 worth of vegetables raised on a six-acre farm. The soil upon which crops averaging \$2000 an acre were raised are found in 30,000,000 acres of land stretching from the Chesapeake basin along the Atlantic and Gulf coasts into Texas. The soils are known as the Norfolk fine sandy loam, the Norfolk fine sand, the Portsmouth series, the Coxville fine

sandy loam and the Coxville sandy loam, all especially adapted to truck growing. The agricultural possibilities in these soils is indicated in the fact that of the Norfolk fine sandy loam, not more than 5,000,000 acres are used for any agricultural purpose, except grazing, and a smaller area is devoted to truck growing. If all the 4,682,992 acres of Norfolk fine sandy loam that have been traced could be made to yield on the average per acre as much as Bert Haines obtained from his six acres, the annual output would be worth \$9,000,000,000, a sum not much less than the value of all agricultural production in the United States. Such a result is possible only statistically. But contemplation of it suggests the vast opportunities in the South awaiting intelligent farming.

#### A LONG STROKE FOR THE SOUTH.

I AM trying to quit business, and as long as I read what you have to say about the South I get enthused with its possibilities and keep right on with a long stroke.

That is an extract from a letter of J. J. Fretwell, who is in the real estate business at Anderson, S. C. Mr. Fretwell became a subscriber to the MANUFACTURERS RECORD in 1893, and has read it for twenty-two years, or two-thirds of its life. He thinks that as long as he continues to read it he will be hampered in his endeavor to quit business, his success in which he is kind enough to attribute to his use of the MANUFACTURERS RECORD. With his comment should be read that of President Charles H. Brown of the Tampa & Gulf Coast Railroad Co., who, subscribing for two years, says:

The only fault I find with the MANUFACTURERS RECORD is that I have not sufficient time to read its splendid contents. You have a great paper and one that is doing the entire country a great good.

It has been our good fortune during our whole career of thirty-three years to be in close touch with many men who have been pulling persistently long strokes for Southern progress. Like everyone else who is accomplishing anything worth while on material lines, these pullers of long strokes have been very busy men—too busy at times, perhaps, to read regularly all that has appeared in our columns. But none is too busy to keep within close touch of our columns so as to be able in a moment of leisure to find some fact of practical value in his work or inspiration to greater endeavor. We would not care to be responsible for any man's remaining at the oars after he feels that he has made the course satisfactorily and is entitled to enjoy the results cum laude et dignitate. It is really a duty for some men to let go, provided they do not fly off at a tangent. Some of us are so constituted that our work dominates us instead of our dominating it. In such a case quitting business is to our injury. For the average worker change of occupation is the best sort of recreation. We believe that a man who has been reading the MANUFACTURERS RECORD for twenty-two years knows it well enough to understand that he will find it a guide, councillor and friend in whatever change of occupation he may select, and we hope that if he should determine to quit pulling his long stroke he will see to it that someone equally competent shall take his place at the oars.

#### A MAN WITH AN IDEA.

A. D. POWERS of Seadrift, Tex., has started a monthly paper. He has named it Our Country Cousins. An important member of his family says it should be called "Powers' Pastime," as it will be only an expensive amusement for the editor. That expectation remains to be proved. Powers doesn't think so. There is reason for his confidence in his enterprise, which is designed to promote better relations between town and country. The man has genuine humor. That is a saving grace in many emergencies. It prevents one from making himself absurd by taking himself too seriously. His humor crops out in a number of places. For instance:

Why I do not print pictures: First of all, pictures cost money. When I get more subscribers and more advertising I may be able to print pictures and also to use better paper. But there is one trouble. Some people look at the

pictures and fail to read the printing. Maybe if there are no pictures you will read the paper.

Why I use this kind of paper: I use this kind of paper because it's cheap. I want to make this magazine pay expenses, and then I will use better paper. \* \* \* My advertising patronage is necessarily small. If that increases, I will give you a bigger magazine and have it printed on better paper. Don't judge Our Country Cousins by the first issue. When you were a month old you didn't amount to much, did you? But you grew. So will this magazine if folks will help it.

The subscription price of this paper is one dollar per year. I am charging that price because I intend to print a paper that is worth it.

In those statements are embodied frankness, a sense of proportion and a light-heartedness that would advantage publications of greater pretentiousness. Powers knows his limitations. He wants others to know them. If his venture turns out to be only "Powers' Pastime," it will not be because of its inherent right to be otherwise. He has an original idea. He goes about developing it in his own way. Powers ought to make a go of his paper.

#### LOUISIANA'S PRODUCTIVITY.

SOMETHING more than \$84,000,000,000 was the value of the yield of 5,000,702 acres of land in Louisiana last year, the average acre yield being \$16.55. The production, by quantities and values, was as follows:

	Value.
Corn, 30,808,005 bushels.....	\$20,027,835
Sugar, 409,091,487 pounds.....	16,550,830
Cotton, 438,360 bales.....	15,417,000
Rough rice, 502,308,920 pounds.....	11,074,344
Cottonseed.....	5,000,000
Hay, 328,004 tons.....	3,344,120
Sweet potatoes, 5,224,355 bushels.....	2,696,621
Syrup, 96,070 barrels.....	1,735,148
Milk, 5,190,300 gallons.....	1,540,300
Molasses, 298,225 barrels.....	1,461,962
Strawberries, 1482 carloads.....	1,214,600
Oats, 1,907,094 bushels.....	1,036,121
Irish potatoes, 1,312,150 bushels.....	919,042
Cattle, 1059 carloads.....	675,725
Vegetables, 1753 carloads.....	596,812
Canned goods.....	446,200
Peanuts, 347,910 bushels.....	325,619
Oranges, 185,400 boxes.....	133,500
Tobacco, 220,000 pounds.....	55,000
Hogs, 69 carloads.....	39,956
Total.....	\$84,290,825

These figures, which are derived from the annual report of Commissioner E. O. Bruner of the Louisiana Department of Agriculture and Immigration, do not include the values of large quantities of poultry, eggs, honey, butter, home-canned fruits and vegetables and other products sold or used at home, nor do they include the production of three parishes still to make reports. The figures, too, are confined to agricultural production. In estimating the total production of the State must be included 2,985,269,000 feet of lumber, valued at \$35,036,985; sulphur, \$14,000,000; oil, \$4,448,635; salt, \$1,000,000, and natural gas, \$33,300, together with the output of 197 factories, \$25,649,075, not including the industries of New Orleans and the cottonseed-oil mills of the State. The output of New Orleans factories may be conservatively estimated at \$90,000,000 and of the cottonseed-oil mills at \$5,000,000, bringing the total for the selected outputs up to \$259,000,000, which is about one-half of the value of Louisiana production on all lines. Bearing directly upon agricultural production is the equipment included in the following:

	Value.
439 sawmills.....	\$23,220,020
388 sugar mills and refineries.....	18,568,770
26 rice mills.....	1,821,500
33 cotton-oil mills.....	1,810,330
1041 cotton gins.....	1,438,900
17 canneries.....	446,200
197 other factories.....	12,193,970
76 irrigation plants.....	2,613,750
662 miles irrigation canals.....	3,112,000
151,822 mules.....	9,322,573
127,555 horses.....	6,466,563
367,254 cattle.....	4,318,667
174,114 hogs.....	798,854
76,994 sheep.....	106,608
Total.....	\$86,328,795

The lands of the State are valued at \$245,398,877. It is, therefore, apparent that the opportunities for investment in productive enterprises in Louisiana have hardly begun to be realized.



## A GEORGIA FINANCIAL KEYNOTE.

SA G. CANDLER'S purchase of the entire issue of \$3,525,000 of 4½ per cent. refunding bonds of the State of Georgia stands out before the world as one of the most notable financial transactions ever consummated by an individual, not only because he made the purchase of the securities as an individual, but also for the reason that he offered such a premium for them that other bidders were outclassed—to employ a sporting simile—from the start. It was a wonderful deal, and it is particularly gratifying that the \$63,000 (approximately) given by him in addition to the par value of the bonds came from a native of the State, and constitutes such an expression of confidence in its future as could have been uttered in scarcely any other manner with equal effect.

It appears that there were fourteen more bids submitted to the authorities for the securities, and the one next highest to that of Mr. Candler was presented by a syndicate. The fact that one man was able to take the whole amount of the bonds and to be able and willing to pay more for them than any combination of individuals desiring to obtain the offering speaks volumes for him and also for the Commonwealth whose manifold opportunities made possible the production of so public-spirited, farsighted and progressive a citizen. His broad and penetrating knowledge of conditions in Georgia enabled him to look into the future, and by this, his latest notable act, he makes himself a potent prophet for her and incidentally for the South.

"Money talks," it is true, but there is much more than the cash in the spirit of this large operation, for it is an expression of wisdom born of generous experience and studious information. The finances of the State rest upon sounder foundations than ever as a result of discreet legislation which has equalized taxation and fixed its credit. The bidding was eloquent of the heightening of the esteem that is entertained for Georgia's obligations, and it is practically assured that when other bonds may hereafter be offered by her competition for them will be perhaps even more lively and appreciative.

A late report from Atlanta says that one of Mr. Candler's principal reasons for making his bid for the entire issue was to enable Georgia investors to have the first chance to obtain them in small lots, and that he has declined for the present some large offers from outside of the State. Meanwhile, \$2,500,000 of the bonds are being offered through an Atlanta bond house in lots to suit purchasers. His argument is that "when Georgia has anything to sell as good as her bonds Georgia people are able to buy them. We are able to protect our own assets." To this he added that he had carefully looked into the subject and satisfied himself that a Georgia bond was as good an investment as could be made. Hence his bid. Governor Slaton says that the issue was bid for many times over. All these things lend especial interest to the matter and direct general attention to the argument that the people of a State should be the first to respond to offerings of its securities.

## 1914 Cottonseed Crush.

The crush of 1914 cottonseed by 890 mills was 5,493,599 tons, an increase over the preceding year of 726,097 tons. All but 7 mills, and they in Arizona, California, Illinois and Kansas, are in 13 Southern States, ranging in number by States from 233 in Texas to 4 in Florida. Texas led in the crush, with 1,447,739 tons, Georgia ranking second, with 1,006,834 tons; Mississippi third, with \$493,646 tons; Alabama fourth, with 472,199 tons, and South Carolina fifth, with 444,656 tons. In the total crush 772,270 running bales of lint were obtained, an increase of 141,117 bales.

## Alabama Coal and Coke.

State Mine Inspector C. H. Nesbitt of Alabama reports that in 1914 the coal output of the State was 15,520,943 tons, a decrease under 1913 of 2,386,341 tons, and the coke output was 3,092,780 tons, a decrease of 538,725 tons. Of the coke, 2,042,068 tons were made in by-product ovens.

## The South in Commercial Map-Making

Sixty-six years ago, five years before De Lesseps obtained his concession for construction of the Suez Canal and ten years before work on that waterway began, Matthew Fontaine Maury, then a lieutenant in the United States Navy, called for an Isthmian Canal connecting with the Pacific the Mexican Gulf-Caribbean basin, which he called the Mediterranean of the new world.

"The time is rapidly approaching, if it has not already arrived," wrote this great Virginian in a practical essay in commercial geography, "when the Atlantic and Pacific must join hands across the Isthmus."

"The river basins draining into the Gulf and Caribbean," he continued, "exceed, in extent of area and capacity of production, the river basins of the Mediterranean. The countries in Africa, Asia, and Europe which comprise the river basins of the Mediterranean are in superficial extent but little more than one-fourth the size of those which are drained by this sea in our midst. It is the Mediterranean of the new world, and nature has laid it out on a scale for commerce far more grand than its type in the old.

"The Mississippi and the Amazon are the two great commercial arteries of the continent. They are fed by tributaries with navigable lengths of channel more than enough to encircle the globe.

"It is an important physical-commercial fact that the area of all the valleys which are drained by the rivers of Europe which empty into the Atlantic, of all the valleys that are drained by the rivers of Asia which empty into the Indian Ocean, and of all the valleys that are drained by the rivers of Africa and Europe which empty into the Mediterranean does not cover an extent of territory as great as that included in the valleys drained by the American rivers alone which discharge themselves into our central sea. Never was there such concentration upon any sea of commercial resources. Never was there a sea known with such a back-country tributary to it.

"The three great outlets of commerce, the Delta of the Mississippi, the mouths of the Hudson and the Amazon are all within 2000 miles, ten days' sail of Darien. It is a barrier that separates us from the markets of 600,000,000 people—three-fourths of the population of the earth. Break it down, therefore, and this country is placed midway between Europe and Asia; this sea becomes the center of the world and the focus of the world's commerce. This is a highway that will give vent to commerce, scope to energy and range to enterprise, which in a few years hence will make gay with steam and canvas parts of the ocean that are now unfrequented and almost unknown. Old channels of trade will be broken up and new ones opened. We desire to see our own country the standard-bearer in this great work."

Maury pointed out that from the Gulf of Mexico all the great commercial markets of the world were downhill; that when a commercial thoroughfare should be established across the Isthmus the trade-winds of the Pacific would place China, India and other lands on that ocean also downhill from the Mediterranean of the new world, and in that case the whole of Europe would be obliged to pass our very doors on the great highway to the markets.

Maury's paper dealt with drainage areas in the three Americas, aggregating something less than 5,000,000 square miles. For laboratory purposes, as it were, may be studied with interest, perhaps, if not with profit, about one-fifth of that area which is embraced in the South.

By the South is meant the section of country between Mason and Dixon's line and the Ohio River and the Rio Grande, including Missouri and Oklahoma. Ten of its 16 States lie entirely below the Missouri compromise line, 36 degrees, 30 minutes, north latitude, above which it was regarded as unprofitable, in the main, to raise cotton by slave labor. The South's area is 945,000 square miles, about 32 per cent. of the area of all continental United States. A better idea of its extent may be had in the statement that either Germany or France might be placed in Texas and there would still be room for the whole of New England. Germany, France, the United Kingdom, Holland, Belgium, Norway, Sweden and Denmark have an aggregate area 71,000 miles less than that of the South.

In that area are some of the greatest reserves of coal, petroleum and other minerals, of timber and of land in

the world—the sources of domestic and foreign commerce.

The South has 3053 of the 5270 miles of main ocean and Gulf shore line of the United States, Florida alone having 1146 miles, or only about 200 miles less than the Pacific coast. This shore line is indented with many inlets and arms, the greatest of the latter being the Chesapeake, with its Hampton Roads basin, capable of floating the combined navies of the world. Into most of these arms or inlets flow rivers, some of them reaching far into the interior, and, including the bayous of Louisiana and Texas and the sounds of the Atlantic and Gulf, aggregating in navigable length nearly 19,000 miles. The Mississippi River and its tributaries within the South constitute at least one-third of the length of these waterways.

Before the era of ocean steamships, opened, by the way, when Savannah sent the first steamship across the Atlantic to Europe in 1819, and before improvements in the keels of sailing vessels had been perfected, the natural sailing route from Europe to this country was by way of the Windward Islands and on to Charleston, S. C., the first port of call on the Atlantic coast. The coming of the steamship in independence of the winds changed the westbound routes to a more northerly latitude, and the center of our foreign commerce began to trend more and more toward New York.

But the natural harbors of the South remained and were readily adaptable, through dredging and the construction of protective works, to the demands of modern steamships of greater draught than the sailing vessels, and only within the past two years has an engineer of New Orleans devised a system of self-propelled steel barges qualified by their small draught and freedom of action for traffic upon the inland waterways and bringing, for instance, the coal fields of Alabama into close touch with deep water at New Orleans.

So, as far as highways for trade and commerce are concerned, nature has equipped the South pretty thoroughly.

What of the materials for commerce, the merchandise of various kinds?

The annual value of primary production in the South is \$4,800,000,000—from its fields \$3,630,000,000, from its forests \$700,000,000 and from its mines and quarries \$473,000,000. These products enter largely as materials into the output of its factories, valued at \$3,900,000,000.

Of the 600,000,000 acres of land in the South, 542,000,000, including 258,000,000 acres still in forest and woodland, are capable of bearing crops. Only 175,000,000 acres are included in farms, and perhaps the majority of those farms are not worked to their utmost capacity. For instance, about \$100,000,000 represent the output of the trucking industry every year, an industry which in the past 60 years has extended from Norfolk along the coastal plain and in some cases into the Piedmont regions from Virginia to Texas. The coastal plain of the South Atlantic contains about 30,000,000 acres of land specially suited to truck-growing. But hardly more than 11,000,000 acres of that particular land are occupied for any agricultural undertaking save grazing. From Virginia to Texas, too, stretch the 100,000,000 acres of soil in which cotton flourishes, but only 36,000,000 acres are devoted to that staple. In the lower Mississippi Valley are 30,000 square miles of alluvial land, some of it still under water at times, but capable under reclamation of raising a bale of cotton to the acre, or a crop 3,000,000 bales greater than any that has been raised in this country.

All crops common to the country may be raised in the South, but it has a virtual monopoly in cotton, rice and sugar-cane, and it raises the larger portion of the tobacco.

Its agricultural potentialities are well indicated in North Carolina, rising from tide to mountain ranges, with the highest peak of the Appalachians, Mt. Mitchell, 6711 feet, dominating a view of 82 other peaks exceeding 5000 feet in height. That State has within its length of 503 miles from east to west a variety of climates and soils embracing the subtropical at one end and the subarctic at the other. Beneath its surface are 184 different minerals.

North Carolina rises into the Appalachian region, which in the South extends, with an average breadth of 208 miles, from Mason and Dixon's line to Alabama. Centering in this region, which has an area of 162,200

square miles, are many of the coal measures of the South. In 150 years these have been depleted to the extent of about 3,000,000,000 tons, and 143,000,000 tons are mined now every year. But they still contain 529,000,000,000 tons. This coal underlies 87,000 square miles, nearly twice the coal area of Europe and seven times the area of Maryland. There are, besides, 84,000 square miles underlain with lignite, and where neither coal nor lignite abounds, unmeasured resources of peat, practically all parts of Florida having peat beds. Petroleum flowing 103,000,000 barrels annually and billions of cubic feet of natural gas are other fuels close at hand for industry in its alliance with commerce. Within the highland streams is latent hydro-electric energy equal to 20,000,000 horse-power.

Of phosphate rock, 47,000,000 tons have been mined since 1880. Florida, South Carolina and Tennessee mine practically all the phosphate rock of the country at the rate of 3,000,000 tons a year, of which 1,200,000 tons are exported.

Four Southern States, Alabama, Arkansas, Georgia and Tennessee, supply all the native bauxite of the country, from which the metal aluminum is derived, the output having increased between 1903 and 1913 from 9179 tons to 210,241 tons and being paralleled by an increase in the production of aluminum from 7,500,000 pounds to 72,379,000 pounds.

Practically all the fuller's earth and all the manganese produced in this country, together with all of three or four other minerals, are mined in the South, which produces all of the sixty-odd commercial minerals of the country except borax and platinum. Missouri is the center of the country's lead and the zinc industry, and Louisiana is the peculiar home of rock salt.

For more than 30 years vast beds of sulphur lying at a depth of 1000 feet or more in Southwest Louisiana remained inaccessible, in spite of efforts to reach them. Ten or twelve years ago the problem was solved, and since then as much as 787,000 tons have been mined in one year. The story of this development is one of the South's material romances. Its bearing upon commercial geography is most direct. In 1900 this country produced only 3147 tons of sulphur; in 1913 the output was 311,500 tons. In the meantime, the annual imports of sulphur, principally from Sicily, with the exception of that brought to the Pacific coast from Japan, decreased from 168,000 tons to 22,005 tons. The Louisiana company had also established its own stations at Rotterdam, Hamburg, Marseille and Cette. Louisiana sulphur and that mined across in Texas are in a position to dominate the world's markets, sending Sicily to second place.

As a matter of fact, shortly after the successful opening of the Louisiana deposit was made the effect upon the market was such that for a while the stability of the Sicilian industry was seriously menaced and consequent social and political disturbances in Italy threatened.

In the third field of primary production, lumbering, the importance of the South is becoming greater every year. It has 200 different kinds of woods and cuts 40 kinds into lumber. The annual cut of that section has increased more than six times since 1880, and now is 3,000,000,000 feet larger than that of the country in that earlier year.

With materials for commerce and natural channels for its carriage, the South is still exporting too much in the rough and not enough in finished products. There is a reason for that.

If means of transportation in this country had remained as they were a century ago, about the time that New Orleans was beginning to send steamboats up the Mississippi River, if no railroad had been built, New Orleans and not New York would today be the commercial metropolis of the United States. The Mississippi, with its tributaries, has a navigable length of 12,659 miles. It drains 1,250,000 square miles, or 43 per cent., of the total land area of continental United States. Just as inevitably as the detritus from that vast area, now embracing 31 States in part or whole, helped to build up the land of half a dozen States or more in the lower valley and has for years inclined to carry Louisiana territory into the Gulf, so would the foreign-bound trade of the productive heart of America have had its great exit through the port of New Orleans.

Realization of the strategic position of that city was an impelling ultimate cause of the purchase of Louisiana in 1803. That purchase determined that the English-

speaking United States should stretch from the Atlantic to the Pacific. The purchase was an acceleration of the inclination of the people of the seaboard States of the North Atlantic to enter in upon the virgin soils beyond the Appalachians, and presently, as those soils became fruitful, the canal and railroad were slowly but surely carried to points where they could tap the new sources of materials for domestic and foreign trade. Thus the streams of commerce that naturally would have flowed toward New Orleans or other Gulf ports were diverted to the Atlantic coast, the railroads which carried grain and cattle and timber eastward giving transportation westward to native or foreign migrants peopling the upper half of the valley with other producers. There was a diminution in the flow of population from the North to the South by sailing vessels or along land routes following the lines of the mountains, and even the railroads project in the South of 60 or 70 years ago reflected in their routes planned the purpose to participate in the movement of outward-bound commerce from east to west instead of from north to south.

After a while, though, the rather rhetorical thought that one might start a barrel of flour at Minneapolis or a can of lard at Chicago and it would roll uninterruptedly to the Gulf took practical shape in the construction or linking up of north and south railroad lines in the valley paralleling the Mississippi River and restoring artificially the natural flow down the valley. The reasons for that are obvious. Centers of production were moving farther to the West and South, and have continued so to move.

Thirty-five years ago Pennsylvania, Ohio, Indiana, Illinois and Michigan raised 215,786,000 bushels of wheat, or 43 per cent. of the total American crop of 498,550,000 bushels in that year, and Minnesota, Iowa, Missouri, Nebraska and Kansas raised 136,397,000 bushels, or 23 per cent. of the total. Last year the five States east of the Mississippi raised only 167,090,000 bushels, or 18.8 per cent. of the total crop of 891,017,000 bushels, and the five States west of the Mississippi raised 346,690,000 bushels, or 38.9 per cent. of the total, and, with the addition of the crop of the Dakotas, which had in the meantime become productive, 459,848,000 bushels, or 51.6 per cent. of the total.

In 1880 Arkansas, Louisiana, Missouri, Oklahoma and Texas cut 1,037,687,000 feet of lumber, only a little more than 5 per cent. of the total cut of the country. In 1913 those five States cut 8,711,570,000 feet, or nearly 23 per cent. of the total cut of the country and 40 per cent. of the total cut of the South, which since 1880 had increased from 21 per cent. to 56 per cent. of the total cut.

Again, of the 5,750,000 bales of cotton of the 1879 American crop, 1,960,000 bales, or 34 per cent. only, were grown west of the Mississippi. The crop of 1914, nearly three times as great as that of 1879, was 16,200,000 bales, averaging 500 pounds each. The portion raised west of the Mississippi was 7,437,000 bales, or 1,687,000 bales more than the whole crop of 1879 and 46 per cent. of the total 1914 crop.

Cotton, indeed, is largely responsible for the importance of Southern ports in foreign trade. In the fiscal year ended June 30, 1913, of the total number, 8,724,572 bales of cotton, valued at \$347,357,195, exported, all but 1,304,910 bales, valued at \$79,940,894, were exported through Southern ports.

The total value of all merchandise exports through those ports was \$822,287,017, of which \$467,416,301, or nearly 57 per cent., represented cotton. The value of merchandise exports from Galveston, \$281,457,858, was more than 34 per cent. of the value of exports from all Southern ports, and \$251,613,273 of Galveston's exports represented the value of 3,876,936 bales of cotton.

There is probably no more striking tabloid illustration of the influence of commerce in map-making than the increase in 33 years in the value of exports from Galveston from \$16,700,000 to \$281,500,000, or nearly seventeen times, an increase coinciding in time with the shifting of the center of cotton production in this country and bringing that port, with its present population of less than 40,000, to the rank of second, next to New York, among the ports of the country in the value of annual exports.

Sixty-five years after Maury urged the joining of the waters of the Atlantic and the Pacific the Panama Canal was opened to traffic. Meanwhile the Suez Canal had been in operation for many years. A trans-Siberian railroad had been completed. The Pacific coast had

been populated and much of the region beyond the drainage area of the Mississippi had been settled. Railroad mileage of the country had increased from less than 9000 miles to more than 250,000, with lines stretching across the continent and with a Pan-American project seriously advocated. The telegraph, the Atlantic cable and the telephone had been perfected, all modifying the commercial map. The population of the United States had increased from 23,000,000 to 100,000,000. Revolutions of many kinds had happened in the Latin American and European nations had taken firm trade root in those countries.

Are the people of the United States to enjoy the proportionate benefits from the construction of the Panama Canal forecast by Maury? Perhaps no. Perhaps yes. Completion of the interocean waterway has changed the commercial map. But other changes, some of them hardly dreamed of by Maury, have occurred. Whatever may be the ultimate advantages, the opportunity in the Panama Canal for the United States seems to be a demonstration of the principle that, although nowadays commerce is at the root of warfare and is stimulated in some directions by war, commerce is a far more satisfactory map-maker than war.

### Florida Sponge Fishery in 1914.

The sales of sponges at the Tarpon Springs (Fla.) Sponge Exchange in 1914 were as follows:

Kind.	Bunches.	Value.
Large sheep's wool.....	80,113	\$173,006 03
Small sheep's wool.....	52,101	41,680 80
Yellow.....	51,894	26,947 00
Grass.....	41,881	16,752 40
Wire.....	19,474	7,780 60
Total.....	245,463	\$265,776 83

In 1913, 254,900 bunches, valued at \$684,918.82 were sold. It is estimated that in each year sponges to the value of about \$50,000 were sold in Tarpon Springs not through the exchange.

The decrease in both quantity and value in 1914 as compared with the preceding year was principally in large sheep's-wool sponges, of which 94,304 bunches were sold for \$545,841.27 in 1913. The sale of small sheep's-wool sponges increased about 60 per cent. in quantity and practically not at all in value, a significant illustration of the wastage in taking immature sponges. The data presented include practically the entire yield of the Florida fishery.

### Plans for \$3,000,000 Coal Company.

Plans are being formulated for incorporating the Kentucky River Corporation of Lexington, Ky., with a capital stock of \$3,000,000. This corporation proposes to merge the Kentucky River Consolidated Coal Co., the Haly Coal Co., the Henry Coal & Coke Co., the Letcher Coal & Coke Co. and the Slemo Coal Co., the last named owning a majority of the stock of the other companies. It will own 100,000 acres of compact coal land in Knott, Perry, Letcher and Leslie counties, Ky., the development of which will be continued with the expectation of having 20,000 acres under thorough development within the next two years. The present mining plants will be extended, lands will be leased to other operators, arrangements will be made with railway companies for railroad extensions to provide shipping facilities, etc. The incorporators of the new company will be as follows: C. Bascom Slemo, Big Stone Gap, Va.; J. W. M. Stewart, Ashland, Ky.; John E. Buckingham, Paintsville, Ky.; J. N. Camden, Versailles, Ky.; D. A. Langhorne, Richmond, Va.

### Seeks Canning and Preserving Location.

John V. McNeil, 6136 Ingleside avenue, Chicago, Ill., writes to the MANUFACTURERS RECORD as follows:

"I have been casting about for a location for a canning and preserving plant. So far I am between Texas and Florida, but was advised you had some information on the subject. If you have any data and can advise me as to the feasibility of such a project, you will confer a great favor."



# Marine Terminals of Beaumont

By H. McL. HARDING, Consulting Engineer, New York.

Texas has an enormous hinterland, rich in the fertility of its soil, in its agricultural products, its mineral resources and its peculiar energy-producing climate, but with few harbors for ocean ships. Along much of the coast of Texas there is little deep water, for the Gulf of Mexico near the coast is shallow and generally for a distance of half a mile from the shore there is not over six feet in depth at low water.

There are, however, a few deep-water channels, extending inland, one of which is the Neches River, and about 50 miles from the Gulf of Mexico, on this river, is the harbor of Beaumont.

Beaumont is within the eastern portion of Texas, and its port will serve an extensive area, larger than the New England States.

There is a channel about 25 feet in depth from the Gulf to the quays of the city and a turning-basin, dredged in front of the quays, and even now its area is greater than the Thames at the port of London, England, and when the dredging now going on is completed, this turning-basin will be in the form of an oval, the dimensions being about one-half to one-third of a mile.

The city was fortunate in being able to secure a large plot of land within a thousand feet of the courthouse, called "Kirby Point," around three sides of which flows the Neches River. With the land and water areas there are available about 55 acres for an industrial or local terminal.

On the other side of the river, bordering partially on this basin, is another area of hundreds of acres of sufficient size for a commercial or through freight terminal for all of Texas. Here will be established a large railway service yard, comprising the receiving, classifying and storage tracks, a transfer station and large cotton, rice and other warehouses, both for outbound and inbound cargoes, as well as large open spaces for the storage of coarse and bulk freight not affected by climatic conditions. The drydocks of the port will later be here. Much of this land, being low-lying, is admirably adapted for a commercial terminal, much preferable to places where there are high banks.

The industrial terminal is designed to be constructed on the unit system. A unit length of quay is equal to 500 feet, which is the length of a large freighter, such a unit being provided with a proportional length of shed, warehouse, necessary railway tracks, and also the transferring and handling machinery. A second unit can be installed without requiring any changes in unit No. 1 or interruption of traffic. Each unit complete, including the above elements, with the dry area, the filling and paving, will make this total investment, without the land, of about \$300,000.

The seven units, with the fish and farm markets, the cold-storage and administration buildings, the manufacturing lofts, sheds, railway approaches and storage tracks will require an investment of about \$3,000,000. Additional units will be constructed according to the demands of traffic.

Freight is transferred by the traveling gentry jib cranes, either to the car, to the quay or the shed, and by the overhead traveling hoists and movable tracks will be assorted, distributed and tiered in the shed, and by other cranes, which will be at the rear of the shed, freight is transferred by one direct movement from the shed to any story of the warehouse.

All the important trunk lines of Texas converge toward Beaumont, and the new lines projected will tap other States to the north of Texas. By means of the terminal railway tracks and the present Belt Line Railroad, cars can be switched between any of the railroads entering Beaumont and any shed, warehouse or storage place within the terminal. Railway tracks are between the shed and the waterway and between the shed and the warehouse, thereby affording complete coordination.

At first along the river banks of the terminal there will be constructed only the concrete quay walls. Later the projecting piers will be added according to the increase of the tonnage. For the present and future development of the industrial terminal there will be, beside that area mentioned, about 325,000 square feet of pier space, 575,000 square feet of slip space and 60 acres in addition in the turning-basin.

There will be 9275 feet of linear frontage over which,

when mechanically equipped with the latest appliances and intensively worked, there can be transferred annually over 3,000,000 tons of miscellaneous cargoes. This linear frontage will be utilized as follows: Discharging and loading berths for 13 ships, each 500 feet in length; 1 ship, 450 feet in length; 2 ships, each 300 feet in length; 3 ships, each 150 feet in length; 3 ships, each 125 feet in length; total, 22 ships.

Other quay wall frontage between the piers will be reserved for barges, lighters, river craft and for smaller vessels.

The seven transfer sheds on the quays and the five trans-shipment sheds on the piers will be of steel, and will have a total holding or short time storage capacity of 114,500 tons.

In the concrete warehouses there will be a long storage capacity of 150,000 tons.

The open storage spaces for outside freight will amount to approximately 300,000 square feet.

The concrete manufacturing lofts will have a combined floor area of 620,000 square feet.

There will be an administration building, the farm and fish markets and cold-storage building.

Coal pockets and oil pipes are where vessels can be supplied with the least discomfort to the remainder of the terminal.

The principal freight movements will be between the vessel and the pier, quay, shed, car, dray or large motor truck, and also between the shed and car and the different stories of the warehouse, all of which movements will be effected by machinery.

The following are the characteristics of the traveling gantry jib cranes. Two types of cranes, one the half-arch and the other the full arch. Normal load, 3 tons; overreach, 45 feet; horizontal distance between crane tracks, 32 feet; maximum height of lift, 70 feet; lifting speed, 3 tons at 150 feet per minute; lifting speed, 1½ tons at 200 feet per minute; motive power, electricity, direct current, either 550 or 220 volts, D. C.; 50 or 60 cycles or drafts per hour.

There will also be transfer bridges for lumber and structural steel and conveyors for special commodities.

In the sheds will be overhead traveling transfer cranes and electric traveling hoists of a hoisting and carrying capacity of two tons each for the assorting, distributing and tiering of miscellaneous freight. The hoists will be operated in trains. For long movements motor trucks will be used.

The quay walls above low water will be composed of concrete. This type of wall, with no wood entering into the construction except that which is below low-water line, and being always wet, is decay resisting and fire-proof.

It is expected that the first unit will be completed and ready to add to the capacity of the present wharves within the next few months.

With its wonderful rail and water transportation facilities, with a section of the country to be served extending 400 miles to the north and to the east and west, with city-owned and operated marine terminals, Beaumont's great future is certain.

## Alabama Power Co.

Referring to plans for betterments in the Birmingham district, the Alabama Power Co., F. H. Chamberlain, general manager, Birmingham, writes to the MANUFACTURERS RECORD as follows:

"Have arranged to make considerable extension to our gas property in Anniston, installing considerable extension to our gas mains and new apparatus in our gas plants. We have already let contracts for enlargements of mains and extensions covering some 10,000 feet of gas mains running from 4 to 8 inches in size. This order was placed with the United States Cast Iron Pipe & Foundry Co. of Anniston, and we have let contract with Robinson Electric Construction Co. of Anniston for installing said pipe.

"We are also calling for prices on two new benches, one washer, two condensers, one scrubber, two purifiers and miscellaneous other work around the gas plant. All this is being carried out through the Phoenix Construction Co. of New York in our behalf, under the direction

of R. J. McClellan, chief engineer. Our Mr. Mitchell is now considering further extensions to our present lines."

The Alabama Power Co. was mentioned last week in connection with having filed a mortgage to the amount of \$5,000,000, it being understood that \$2,000,000 will be available for early betterments in the Birmingham district.

## BRIDGEPORT AND VICINITY.

### A Flourishing Community in a Rich Section of Alabama.

[Special Correspondence Manufacturers Record.]

Bridgeport, Ala., March 20.

Bridgeport, with a population of 3500, is situated in the northeastern corner of Jackson county, on the Tennessee River, in the heart of the great Tennessee River Valley, noted for its great wheat, corn and cotton fields. It is surrounded by coal, iron and other mineral deposits, and a virgin forest of timber. It has transportation facilities, both rail and water. Large steamers ply the Tennessee River three times a week from Chattanooga, Tenn., via Bridgeport and Decatur to Paducah, Ky., where the river empties into the Ohio River. It has two main line railroads, the Southern Railway, with through trains from New York and Washington via Lynchburg, Bristol, Knoxville, Chattanooga to Memphis, and the Nashville, Chattanooga & St. Louis Railway, with through trains from Jacksonville, Fla., via Atlanta, Chattanooga, Nashville to St. Louis and Chicago, Ill. Bridgeport is within 15 miles of the Tennessee River Power Co.'s hydro-electric plant at Hale's Bar, with 60,000 horse-power, affording enough electrical power to run an unlimited number of plants, and many thousand electrical horse-power along the Tennessee yet undeveloped. Labor is plentiful and cheap. Three miles away is the million-dollar plant of the Dixie Portland Cement Co., with an annual output of 300,000 barrels of cement. The city has water-works that cost more than \$100,000, which furnish water from a mountain spring on a spur of the Cumberland Mountains five miles from the city by way of a reservoir of 750,000 gallons capacity. From this the water flows through an 18-inch main into the city limits and produces 150 pounds pressure per square inch, rendering damage by fire an almost impossibility. As a further preventive of damage by fire the city owns an auxiliary plant on the river to use in case of breakdown or other mishap to the water-works connected to the reservoir on the mountain.

With these great natural advantages for industrial growth and development at Bridgeport are offered free factory sites and free taxes to manufacturing interests who locate there. Bridgeport is high, dry and rolling, and has been planned and laid off for a city. The corporate limits extend to the center of Long Island, and to two miles west of the river. It is the same distance across the city north and south.

In addition to the railroad facilities mentioned above, Bridgeport is the terminus of the Pikeville and Orme branches of the Nashville, Chattanooga & St. Louis Railway. The Pikeville branch extends to Pikeville, Tenn., a distance of 57 miles, and traverses the rich and fertile Sequatchie Valley of Tennessee, thus bringing to and through Bridgeport the products of that section, including 10 to 15 cars of coal daily from the mines of the Tennessee Coal, Iron & Railroad Co. at Whitwell, Tenn., only 23 miles from Bridgeport. The Orme branch extends from Bridgeport to Orme, Tenn., a distance of only 10 miles, and from where are shipped about 15 cars of coal daily. There are other coal and mineral land along this line, all principally owned by the Campbell Coal Co. We contend, therefore, that Bridgeport is surrounded by plenty of raw material for the manufacture of most any product.

Sand Mountain is a magnificent plateau of rich sandy level land, and extends from a few miles below Chattanooga into Blount county, in the Birmingham district. The inhabitants of Sand Mountain have built towns, churches, schoolhouses, and cleared farms. The agricultural school at Albertville is one of the best in the State, and several hundred boys and girls not only from Alabama, but from other States, graduate there every year with high honors. Sand Mountain has abundance of mineral, coal and fine timber yet undeveloped. The Nashville, Chattanooga & St. Louis has a line extend-

ing across the mountain from Guntersville via Albertville and Boaz to Gadsden. Therefore, all the products of this valuable mountain country, except that which is produced on the extreme eastern border and extreme southern end, are hauled to the Tennessee River and transported by steamer to the elevator at Bridgeport, from where it is marketed at will of the owner. Sand transported by steamer to the elevator at Bridgeport. It is to be hoped that the proposed electric line from Birmingham to Chattanooga, headed by J. M. Spradlin of Boaz, will ultimately be pushed to completion. Such a road would give the people of Sand Mountain, and especially of the eastern side, very great advantages in marketing their produce, mineral and timber by providing an outlet by rail to and from Chattanooga and Birmingham.

Bridgeport is connected with a fine system of highways extending in every direction. Tourists when motoring in the South should not fail to visit Bridgeport. The highways are always in excellent condition, and besides Bridgeport is on the main highway between Chattanooga and Nashville, being only 29 miles from the former and 120 miles from the latter. Jackson county was one of the first in Alabama to build good roads. Five hundred thousand dollars' worth of bonds were sold more than 12 years ago, and as a result Jackson county has a net of macadam roads from one border to the other. The highways in this county were not built by amateurs, but by competent road builders. Every road in the county is constructed of genuine limestone macadam, and although they have been in use from 10 to 12 years, there is but little repair work to be done on these roads.

L. P. MASON.

#### UNITED STATES STEEL REPORT.

Although 1914 Showed a Heavy Decrease, Orders Are Now Larger, Including Export Business.

The report of the thirteenth year of the United States Steel Corporation shows a decline in the volume of business as compared with the preceding year of 29.92 per cent. The report is for the year 1914, and the gross sales by manufacturing, iron ore and coal and coke companies, together with the gross earnings and receipts of transportation and miscellaneous companies, made a grand total of \$558,414,933, as compared with \$796,894,290 in 1913, or a falling off of \$238,479,366, or practically 30 per cent.

The gross sales of the manufacturing, iron ore and coal and coke companies alone amounted to \$509,793,872, which was divided thus: To customers outside of the United States Steel organization, \$380,228,143; inter-company sales (sales between subsidiary companies), \$129,565,729. In the total there was a decline shown of \$221,110,174.

The total earnings of all properties, after deducting all expenses incident to operations, including those for ordinary repairs and maintenance (approximately \$40,000,000), and allowing for income tax in 1915, were \$81,746,517. Deducting from this interest on bonds, mortgages and purchase money obligations of subsidiaries, left a balance of earnings of \$71,603,615. Taking from this charges and allowances for depreciation, replacement and sinking funds left for net income the sum of \$46,520,407. Out of this came the interest on United States Steel Corporation bonds (\$22,239,086) and premium paid on bonds redeemed by sinking funds (\$909,531), left a balance of \$23,371,789, which was increased by the addition of \$124,978, representing the net balance of sundry charges and credits, including adjustments of various accounts, thus making a total of \$23,496,768. Consequently, payment of the dividends on the preferred and common stocks, amounting to a total of \$40,468,732, left a deficit of \$16,971,983 for the year.

The balance of earnings (\$71,603,615) was \$65,517,729 less than in 1913, and the net income (\$46,520,407) was \$58,800,284 less. Instead of a balance of surplus there was the deficit of \$16,971,983, whereas in 1913 there was a surplus of \$15,582,183, so that there ensued a decrease of \$32,554,166.

Elbert H. Gary, chairman, says: "The substantial lessening in the demand for products of the subsidiary companies, which commenced in the midsummer of 1913, generally continued with some fluctuations throughout the year 1914. The improvement in demand

at the opening of the year was not maintained in the succeeding months. In June and July some increase in demand was noticed, but with the outbreak of the European war the business offering decreased, so that in the closing quarter of the year operations reached the lowest average as related to capacity which has prevailed in any quarter since the organization of the Corporation. The decrease in export business was relatively greater than in the domestic trade, the decrease in tonnage of rolled and finished products shipped for export having been 37.6 per cent., as compared with 23.3 per cent. decrease in the domestic tonnage.

"Contemporaneously with the decrease in demand for and output of commodities there was a decline in the prices obtained for nearly all classes of products. The decrease in prices received in 1914, as compared with 1913, averaged \$2.54 per ton on the total tonnage of rolled and other finished products, and accounted in round figures for \$23,000,000 of the total decrease of \$65,420,098 in the earnings of 1914 as compared with the earnings of the previous year.

"The unfilled orders of the subsidiary companies at December 31, 1914, equaled 3,836,643 tons of rolled products, and on March 1, 1915, 4,345,371 tons. A considerable portion of this tonnage covers contract requirements extending through the first six months of 1915.

"Since January 1, 1915, there has been a material improvement in the bookings of export business, and it is at present equal to the average of the last three years."

#### Has Coal Washer Contracts.

Indications of improving business conditions are presented in a letter from the Montgomery Coal Washing & Manufacturing Co., Birmingham, Ala., which writes to the MANUFACTURERS RECORD as follows:

"In spite of the depression in business, we now have contracts for two small coal-washing plants. One in the State of Washington and one in our own State. The plant in Washington was sold to the National Coal Co., general office at Seattle. This plant will have a daily capacity of 300 tons per day of eight hours, and will cost approximately \$9000. The plant sold in Alabama will have a capacity of 200 tons per day of eight hours, and will cost, including storage bins, approximately \$6000. This plant was sold to Sipsey Coal Mining Co., Empire, Ala., R. F. D. No. 1. We have a number of prospects for more costly plants, and we believe the prospects are brighter now than any time during the past year."

#### Consolidation Coal Co.

Last week the Consolidation Coal Co. held its annual stockholders' meeting at Baltimore and elected the following directors: Jere E. Wheelwright, C. W. Watson, H. Crawford Black, George C. Jenkins, Van Lear Black, S. Davies Warfield, A. B. Fleming, J. E. Watson, William H. Grafflin, William Winchester, S. L. Watson, F. S. Landstreet and George T. Watson. The directors re-elected the officers as follows: Mr. Wheelwright, president; C. W. Watson, chairman of board; Mr. Landstreet and George T. Watson, vice-presidents; S. L. Watson, treasurer. The annual report showed a decrease in gross tonnage of 397,296, and a net tonnage decrease of 444,972 for 1914. Earnings, including those of subsidiary companies, were also affected by adverse industrial conditions. The gross for 1913 was \$15,443,256. For 1914 the gross was \$14,828,980. The net earnings for 1913 were \$3,826,703. For 1914 they were \$3,392,645.

#### Virginia Cannery.

The Virginia Cannery Association elected last week F. D. Bolton, Troutville, president; Henry Warden, Fredericksburg; F. W. Huddleston, Thaxton; W. S. Spigle, Troutville; O. B. Jamison, Boone's Mill, and Wm. Layman, Bonsack's, vice-presidents; W. C. Smiley, Roanoke, secretary-treasurer, and the following executive committee: F. D. Bolton, Troutville; J. F. W. Huddleston, Thaxton; W. C. Smiley, Roanoke; W. P. Crumpacker, Roanoke; C. R. Bolton, Troutville; B. F. Moonaw, Troutville; W. G. Spigle, Troutville; W. P. Barley, Buchanan; J. J. Fisher, Fredericksburg; Henry

Warden, Fredericksburg; F. L. Smiley, Roanoke; M. T. Sink, A. L. Murray, B. R. Ikenberry, Wm. Layman, R. D. Hurt, Salem; O. B. Jamison, Boone's Mill; J. L. Fisher, Wirtz; S. W. Huddleston, Thaxton; J. W. Bowie, Roanoke; H. A. Stanley, Bedford; Will Rucker, Moneta; G. C. Flora, Rocky Mount.

#### American Power & Light Co.

The annual report for 1914 of the American Power & Light Co., which controls the Southwestern Utilities Corporation, that operates through subsidiary companies various plants in a number of Texas cities, including Fort Worth, Waco, Paris, Denison, Sherman, Wichita Falls, El Paso, etc., besides others elsewhere in the country shows total gross earnings of \$6,615,994, of which 58 per cent. was from electric light and power, 28 per cent. from artificial gas, 8 per cent. from natural gas, 3 per cent. from railway and 3 per cent. from water business. The income account displays a balance of \$93,998 after deducting reserve for depreciation and all interest charges and dividends. The balance combined surplus on December 31 was \$1,325,162. The total population served is 875,000, and there is a total of 152,288 customers. During the year there was placed in service at Waco the first unit of a new generating station.

#### Maryland State Banks.

J. Duke Downes, Bank Commissioner of Maryland, has submitted the fifth annual report of his department to the Governor of the State. It covers as of December 31, 1914, the condition of 135 State banks and trust companies, including 14 branches, the condition of 20 savings institutions and considerable other related data. The resources of the banks and trust companies were then \$127,324,489.85, and the resources of the savings institutions \$105,449,254.93. Resources of all concerns mentioned were \$232,773,744.78. During the year 1914 the resources of the banks and trust companies were increased \$8,532,132.61, their deposits increased \$7,314,815.48 and their loans increased \$4,103,447.64.

#### Optimistic Notes Reported.

Three brick plant in the vicinity of New Cumberland, W. Va., resume operations and others prepare to do so. Billet and wire mill of the Gulf States Steel Co. at Gadsden, Ala., operating up to its full capacity. Mathieson Alkali Works at Saltville, Va., obtain an English contract that will insure running at full capacity for a year at least.

#### American Iron and Steel Institute.

The directors of the American Iron and Steel Institute have decided to hold the spring meeting in New York on May 28 and 29 at the Waldorf-Astoria. It was also decided to have fewer formal papers and more informal discussion. The program will be announced in the near future.

"Martinsville, an Old Virginia Town That's Growing New," is the title of a handsomely illustrated booklet which the local Chamber of Commerce is circulating for the purpose of attracting attention to the advantages and opportunities of the town and Henry county.

The Board of Trade of Griffin and Spalding county, Georgia, has named the place "The Turkish Towel Town" because of the output of towels of the kind.

More than 6000 acres of oyster bottoms are under lease in Florida, and last year they yielded a net profit to the State of \$4848.

Under the auspices of the Chamber of Commerce, Columbus, Ga., will celebrate "home-coming" April 14-17.



## Good Roads and Streets

### SOUTHERN HIGHWAY ACTIVITIES.

#### Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

#### Bonds Voted.

Anderson, S. C.—City voted \$100,000 bonds for street paving, making \$225,000 now available.

Barbourville, Ky.—Knox county voted \$200,000 bonds to construct about 64 miles of roads.

Bradentown, Fla.—Manatee County Sarasota-Venice Road and Bridge District voted \$250,000 bonds for road and bridge construction.

Corsicana, Tex.—Navarro County Road District No. 3 voted \$75,000 bonds to construct roads.

Longview, Tex.—Gregg county voted \$300,000 bonds to construct 70 to 100 miles of macadam roads.

#### Bonds to Be Voted.

Fort Myers, Fla.—Lee county votes May 1 on \$200,000 bonds to construct roads.

Jennings, La.—Jefferson Davis parish votes July 29 on \$400,000 bonds for constructing gravel roads.

Karnes City, Tex.—Karnes County Precinct No. 1 voted March 22 on \$75,000 bonds, and Precinct No. 2 voted March 24 on \$200,000 bonds for road construction.

Port Lavaca, Tex.—City votes April 5 on \$19,500 bonds to grade and gravel streets.

#### Contracts Awarded.

Baltimore, Md.—State awarded contracts for road construction totaling \$121,000.

Clearwater, Fla.—City let contract for 21,000 yards of brick paving to cost \$45,000.

Baltimore, Md.—City let contracts for 64,000 square feet of cement footways around various municipal buildings.

Fairmont, W. Va.—Fairmont State Normal School let contract for 1½-mile road.

Hastings, Fla.—City let contract for 5300 square yards of vitrified brick paving.

Houston, Tex.—City let \$12,000 contract for rock asphalt paving.

Houston, Tex.—City let \$4400 contract for vertical fiber brick paving approach to bridge.

Polytechnic, Tex.—City let contract for 15,000 feet of cement sidewalks.

Pulaski, Va.—City let contract for 85,000 square yards of macadam asphalt surface treatment and 21,000 square yards of concrete pavement, to cost \$108,000.

Pulaski, Va.—City let \$103,000 contract for seven miles of macadam and for concrete streets.

#### Contracts to Be Awarded.

Abilene, Tex.—City has bids for 18,300 square yards of gravel paving.

Birmingham, Ala.—City plans grading, curbs, gutters and sidewalks to cost \$5000.

Rockport, Ala.—Coosa county receives bids until April 19 for road grading, draining and surfacing, to cost \$4600.

Bryson City, N. C.—Swain County Road District opens bids April 10 for 26-mile road; \$100,000 available.

Cumberland, Md.—City will pave with krolite blocks at estimated cost of \$23,000.

Hamilton, Ala.—Marion county opens bids April 13 for road construction; \$4608 available.

Lagrange, Ga.—City adopted plans for four blocks of street paving.

Maysville, Ky.—City will construct 1½ miles brick street paving; \$60,000 available.

Whitesburg, Ky.—Letcher county will expend \$25,000 for road and bridge construction between Whitesburg and Fleming.

#### \$5,000,000 for Arkansas Roads.

That 1000 miles of road improvements will be undertaken during the next 12 months by the various coun-

ties of Arkansas is reported as the prediction of W. G. Owen, State highway commissioner, Little Rock. Enactment of the Alexander general road law, which will make salable bonds issued for road improvement, will give impetus to the work, and Mr. Owen is quoted as follows:

"The interest now manifested in almost every part of the State indicates that more miles of roads will be improved within the next 12 months than has been in the last 20 years. This is due to the passage of the Alexander bill and several special bills for road improvement districts. In the short time that has elapsed since the Legislature adjourned there is now in course of formation improvement districts covering 123 miles of road. Besides this, more than one-half the counties in the State are contemplating the formation of road improvement districts covering from 5 to 100 miles, or even more, in each county.

"The following counties are sure to make great progress in road improvements: Arkansas, Faulkner, Monroe, Jackson, Pope, Mississippi and Miller. We are already advised of between 500 and 600 miles of roads that will be improved as quickly as improvement districts can be formed and the work completed, and I feel sure that this amount will be started soon. It is easy to see just what this will mean for Arkansas. This will mean the turning loose of from \$4,000,000 to \$5,000,000, most of which will remain in the community building the roads. In this way we can bring prosperity to Arkansas and at the same time add thousands of miles or more permanent roads to the State, and it is the one thing that will relieve the present 'hard times' in the State, and will be an advertisement for the State in the future.

"I feel sure that when the people understand that their present conditions will be benefited by expending this money in the State at this time, and at the same time get permanent improvements on the roads which will not only be beneficial now, but in the future, there is no question but that more than 1000 miles will be improved within the next 12 or 18 months."

#### Pan-American Road Congress.

Preliminary plans have been completed for what promises to be the largest gathering of good-roads advocates ever held. This meeting will be at the Panama-Pacific International Exposition, and will be known as the Pan-American Road Congress. It will be under the joint auspices of the American Road Builders' Association and the American Highway Association. The tentative date selected is that of the week of September 6.

The plans of the forthcoming congress will be handled by an executive committee of five made up of Governor Charles W. Gates of Vermont, chairman; W. W. Crosby, former State highway engineer of Maryland, and E. L. Powers, representing the American Road Builders' Association, and James H. MacDonald, former State highway commissioner of Connecticut, and J. E. Pennybacker, chief division of economics, United States Office of Public Roads, representing the American Highway Association.

In order to facilitate its work the committee has apportioned same among four subcommittees as follows: Finance, Jas. H. MacDonald; program, W. W. Crosby; publicity, E. L. Powers, and arrangements, J. E. Pennybacker. These subcommittees will start upon their work at once.

It is expected that this meeting will bring together not only official representatives from every State in the Union, but also from the Canadian provinces and many of the South American countries. Official invitations will soon be issued to the Governors of the several States to appoint delegates.

The members of the committee have been working since the last of last year in making preparations for this meeting, and great interest has been shown in the work by those identified with highway improvement. The co-operation of other good-roads organizations, the railroads and others is promised, with the result that it is expected that the meeting will mark a milestone in the propaganda for good roads.

The organizations under whose auspices the joint congress will be held are known as the two leading good-roads associations of the United States. Both associations during the past few years have held successful congresses independently, but this year it was felt, in

view of the Panama-Pacific International Exposition, that it would best serve the interests of all good-roads advocates concerned to hold a joint congress during the exposition. Both organizations are represented by two members on the executive committee, the fifth member having been elected by the other four. The selection of Governor Gates as the fifth member is felt to be peculiarly fortunate, not only on account of his high official position as the chief executive of the State of Vermont and his ability and fairness, but because of the fact that he for 10 years or more was the State highway commissioner of the State of Vermont, and it was due to his record in this office that he was elected Governor by one of the largest majorities ever given a Governor in that State. This election to the Governorship is one of the highest tributes ever paid to a road builder, and, so far as known, is the first instance on record of such recognition. The executive officers of the American Road Builders' Association are as follows: President, George W. Tillson, consulting engineer to the president of the Borough of Brooklyn, New York city; first vice-president, A. W. Dean, chief engineer Massachusetts Highway Commission; second vice-president, Austin B. Fletcher, State highway engineer of California; third vice-president, S. Percy Hooker, State superintendent of highways of New Hampshire; secretary, E. L. Powers; treasurer, W. W. Crosby, former State highway engineer of Maryland.

The executive officers of the American Highway Association are as follows: President, Fairfax Harrison, president Southern Railway Co.; vice-president, Logan Waller Page, director United States Office of Public Roads; chairman board of directors, James S. Harlan, chairman Interstate Commerce Commission; chairman executive committee, Leonard Tufts; treasurer, John Burke, Treasurer of the United States.

#### Good Roads Yearbook.

Six States, namely, Illinois, Kentucky, Massachusetts, New Jersey, New York and Wisconsin, now have civil service laws providing for appointment of highway engineers and employes in accordance with the merit system. A description of the system in effect in each of the six States appears in the Good Roads Yearbook just issued by the American Highway Association at Washington. The summary of automobile legislation in all the States is of timely interest, in view of the fact that nearly 1,900,000 automobiles were registered in the United State during 1914, for which more than \$12,000,000 in license fees was paid. A majority of the States are now trying out the plan of working convicts on public roads. In some States the honor system prevails, and guards are partially or wholly dispensed with. In other States guards are deemed essential, and between the two systems much controversy rages. The Yearbook, with its complete digest of convict labor laws for all the States and its many references throw much light on the subject. That convict labor will go far toward solving the road problem is demonstrated by the experience of Georgia, with its army of nearly 6000 road convicts, and Virginia, with about 1500. The progress reports from these two States appearing in the chapter devoted to highway progress show remarkable gains in mileage of improved roads. The American Highway Association finds the Yearbook one of its most effective mediums for carrying on the campaign for efficient and adequate improvement in the construction, maintenance and administration of the public roads.

#### A \$500,000 Highway Contract.

About \$500,000 will be involved in the highway contract for which the Lake County Commissioners, Tavares, Fla., were recently announced as to receive bids until April 15. Sand-clay, shell, modified asphalt, water-bound macadam, macadam with rocmac binder and oiled macadam will be considered, the material to be determined after bids have been examined. The proposed work will involve the following: Roadway, 1,091,046 linear feet; excavation, 329,630 cubic yards; pavement, 1,147,610 square yards; concrete, 301.62 cubic yards; square deformed steel, 1554 pounds; reinforced concrete steel, 5146 pounds; terra-cotta drains, 12 inches to 24 inches, 885 linear feet; pole line to be moved, 1552 feet; bridges to be raised, 57. The J. B. McCrary Company of Atlanta is the engineer.

## RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### Newport News to Washington.

At a recent meeting of business men in the Chamber of Commerce at Newport News, Va., it was decided to grant an extension of time to the backers of the proposed Norfolk, Washington & New York Railway until December 31 of next year to begin construction. Among those present was F. S. Gannon, 2 Rector street, New York, who said that after the right of way had been assured and provision made for the terminals he had laid the plan before three of his friends in that city and others, the result being investigations as to the probable traffic for such a road, and the reports of the investigators was satisfactory. Considerable money has already been spent for various purposes, including the making of soundings for the bridges which will be required.

The first part of the line to be built will be from Newport News to Washington, D. C., about 150 miles, and Mr. Gannon is reported as saying that he has arranged with the Baltimore & Ohio Railroad Co. for the line to enter there over its tracks. He said that the B. & O. was in no way interested in the proposed line excepting as to the track agreement. The estimated cost of construction of the division mentioned would be about \$8,000,000. He thought that the necessary financing could be arranged when the European war ended.

Channing M. Ward of Richmond is engineer for the line.

It developed at the meeting that the plan for a railway to Washington grew out of two other propositions. One of these presented to Mr. Gannon for consideration planned a line from Hampton to Fredericksburg and the other was the projected "Northern Neck" railroad. He looked into them and was finally impressed with the opportunity for the construction of a direct line to connect Washington and Newport News.

### Edgemont to Newland, N. C.

The Avery Northwestern Railroad Co., recently incorporated by the North Carolina Legislature, has received subscriptions for all of its proposed stock and has organized by the election of P. M. Brown of Newland, N. C., president; W. W. Barber of Edgemont, N. C., manager, and J. W. Ragland of Newland, general counsel.

The line to be built is from Edgemont to Newland, 21 miles, and the engineering corps will complete the survey between Ivy Gap and Newland beginning April 7. Construction is to start at Edgemont.

Mr. Barber says that the road will open up one of the largest lumber and mineral regions in that part of the country. On every stream there is sufficient water power to operate various kinds of mills and factories. The stockholders control a great deal of land there which is suitable for the establishment of homes, besides timber and mining interests, and inducements will be offered to settlers.

### Georgia Railway & Power Report.

The annual report of the Georgia Railway & Power Co. and leased and subsidiary companies for the year 1914 shows operating revenues, \$6,341,183; operating expenses, \$3,323,727; net operating revenue, \$3,017,456; net operating revenue, less taxes, \$2,583,109; gross income, \$2,749,575; net income after interest, rentals, etc., \$643,303; balance after sinking fund contributions, \$540,370. The total assets of the company are \$43,884,637. H. M. Atkinson is chairman of the board; P. S. Arkwright, president; G. W. Brine, vice-president and general manager; W. H. Glenn, secretary and operating manager; I. S. Mitchell, Jr., treasurer; H. Flynn, auditor.

### Kenansville to Bassenger.

Construction of the South Florida & Gulf Railroad, now building from Kenansville to Bassenger, Fla., 35½ miles, is about one-half completed, and when finished it

will open for development about 500,000 acres of prairie lands which are described as being dry and free from heavy growth. J. H. Jordan, 56 Pine street, New York, is the contractor. The route of the line is through country ranging from level to rolling. Connection with the Florida East Coast Railway is made at Kenansville. F. B. Lynch, St. Paul, Minn., is president of the company, and John Lind of Minneapolis is one of the directors.

### Baltimore & Ohio Statement.

The operating revenue of the Baltimore & Ohio Railroad during February, according to the official monthly statement, which has just been issued, was \$6,469,049, increase as compared with the same month of last year \$36,466; total operating expenses \$4,617,732, decrease \$969,600; net operating revenue \$1,851,317, increase \$1,006,065.

It should be noted that these figures compare with February, 1914, when, owing to depression in business and severe weather conditions, both gross and net earnings were quite low. While some of the recently increased rates, both in passenger and freight, were in effect during February, 1915, the principal increase authorized by the Interstate Commerce Commission did not become effective until February 23.

The operating revenue of the system for the first eight months of its fiscal year, from July 1 to February 28, were \$60,093,755, decrease \$7,402,090; total operating expenses \$43,682,833, decrease \$7,095,867; net operating revenue \$16,410,922, decrease \$306,223.

### Texas & Pacific's New Board.

The annual meeting of the Texas & Pacific Railway Co. in New York recently resulted in the election of the following board of directors: George J. Gould, R. M. Galloway, Benjamin Nicoll, R. C. Clowry, Kingdon Gould, Dunlevy Milbank, Henry E. Cooper and Howard Gould (who were re-elected), and Chas. H. Sabin, B. D. Caldwell, John I. Waterbury, Henry Ickelheimer, Henry A. Bishop, Seward Prosser, N. S. Meldrum, William Church Osborn and Thomas L. Chadbourne, Jr., who are new members.

The directors who retired from the board and whose places were filled by the new members were John P. Munn, Frank Jay Gould, Edwin Gould, E. T. Jeffery, Joseph J. Slocum, Thomas J. Freeman, Finley J. Shepard, O. B. Huntsman and E. F. Kearney.

E. J. Pearson has been elected vice-president in charge of operation. He has occupied a similar place with the Missouri Pacific Railway for several years.

### Another Ohio River Bridge.

The Chesapeake & Ohio Railway Co. has awarded the contract for the erection of its steel bridge across the Ohio River at South Portsmouth, Ky., to the McClintic-Marshall Construction Co. of Pittsburgh, the substructure to be built by the Dravo Contracting Co. of the same city.

The estimated cost of this large bridge will be \$1,500,000. It will be a double-tracked structure, altogether 3400 feet long, including two river spans of 775 feet each and two approaches totaling about 1900 feet. There will be 27 concrete piers and 30,000 cubic yards of concrete will be required, besides 16,000 tons of steel for the superstructure.

W. Michel of Columbus, O., is chief engineer for the work, which is being done in the name of the Chesapeake & Ohio Northern Railway Co., that being the title of the corporation formed for the purpose of building the 93-mile extension to Columbus.

### Passing Tracks on Southern Railway.

To provide its trains with increased trackage facilities before the completion of double track now being built, the Southern Railway Co. is putting in passing tracks at six points between Charlotte, N. C., and Greenville, S. C., on the main line from Washington to Atlanta, namely, at Vantine, Archdale, Mt. Zion, Fair Forest, Taylor and Gaffney. At each place an interlocking signal plant is being installed so that the sidings

will be adequately protected. Trains will not be obliged to stop before entering upon the passing tracks, and thus traffic will be uninterrupted. Each of these lap sidings will hold four of the longest freight trains. The construction of the passing tracks is of the main line standard, so that when the building of the second track has come up to them they can be immediately incorporated as part of the new double-tracked line. The interlocking signal plants are also arranged for use with electric automatic block signals which are to be employed with the double track.

### Contract Let for Terminal Line.

The Tidewater Securities Corporation, J. M. Dewberry, president, Van Antwerp Building, Mobile, Ala., has awarded a contract to J. N. Gillis & Son of Brewton, Ala., for the construction of its proposed railroad from a connection with the Mobile & Ohio Railroad near Alabama Port to Cedar Point, opposite Dauphin Island, about 3½ miles. Work is to begin by April 1 and the contract must be completed by July 1.

As heretofore published, the backers of the plans intend to build the railroad all the way to Dauphin Island, which will demand the construction of a total of about nine miles of tracks, including terminal lines on the island. Cedar Point, 26 miles south of Mobile, about four miles from the island, which is to be eventually reached by way of several small islands lying between it and the main land. After completion of the line as far as the Point, and pending construction of the extension to the island, ferryboats will be operated.

It is proposed to establish a coaling station on Dauphin Island and near Fort Gaines, with a depth of 30 feet of water for steamers.

### New Equipment, Etc.

Missouri, Kansas & Texas Railway's equipment requirements, for which bids are requested, amount, according to a report from St. Louis, to \$2,000,000 in value and include 35 locomotives, of which 30 are to be Mikado type freight engines and 5 Pacific type passenger engines, 1000 coal cars and 15 steel passenger cars. None of the contracts have been closed.

New York, Philadelphia & Norfolk Railroad has ordered 76 ventilated box cars from the American Car & Foundry Co., St. Louis, and 2 passenger cars from the Pressed Steel Car Co., Pittsburgh.

Baltimore & Ohio Railroad has placed orders for 600 steel underframes, 200 each with the South Baltimore Car Works, the American Car & Foundry Co. and the Ralston Steel Car Co.

Alberta & Great Waterways Railway Co. has purchased 2 gasoline motor cars from the McKeen Motor Car Co., Omaha, Neb. They are of the combination passenger-baggage type.

### Jacksonville Municipal Terminals.

Construction is progressing, under the direction of the Board of Port Commissioners, on the municipal terminals for Jacksonville, Fla. Available for the improvements is \$1,500,000, and a further expenditure is contemplated. Summarizing what has been accomplished up to this time, the commissioners have sent to the MANUFACTURERS RECORD the following facts:

Began work on October 4; Wade, Clower & Wade, Jacksonville, completed \$125,000 bulkhead about February 1 and used about 2000 tons steel sheet piling from the Lackawanna (N. Y.) Steel Co. Home Dredging Co., Mobile, Ala., began dredging February 9 to reclaim 100 acres of submerged land; probably 1,000,000 cubic yards of dredging required. Board now constructing storage yard and connecting with railways; let contract to Maryland Steel Co., Sparrows Point, Md., for 600 tons 70-pound rail, with splice bars; also contracted for drilling eight-inch well, with guaranteed flow of 1,500,000 gallons per 24 hours; bids opened March 20 for constructing timber wharf around outer 600 feet of two piers, commissioners to furnish creosoted piling, treated cypress piling and 800,000 feet of cypress timber. Home Dredging Co. has dredged exceeding 150,000 cubic yards of mud and sand and deposited same in the two piers. F. W. Bruce is the engineer for the commissioners.



## LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

### UTILIZATION OF TIMBER RESOURCES.

#### The Subject Viewed from a Yellow Pine Manufacturer's Standpoint.

P. S. Gardiner, secretary Eastman Gardiner & Co., Laurel, Miss., writing to the MANUFACTURERS RECORD with reference to an editorial in the issue of March 4 on the handling of by-products of lumbering, says:

"If you will pardon me for making a suggestion. I would like to say whoever wrote this article is not thoroughly posted upon the actual facts, especially in regard to the handling of yellow pine timber. You make the statement that an average of \$50,000,000 worth of standing timber is destroyed by fire annually. This damage must be mostly in the Northwest, in Montana, Idaho, Washington and Oregon, for virgin yellow pine timber is proof against forest fires, and there is no loss in the South of yellow pine timber from forest fires, with the single exception of old turpentine orchards. Yellow pine forests are singularly free from underbrush, and the heavy bark seems to afford sufficient protection from the grass fires. Last summer I was traveling with some friends through a national forest in Montana, and we rode through a section of mixed wood, such as cedar, fir, white pine, hemlock and tamarack, which had all been killed by a forest fire, and only the charred, naked limbs were left. Suddenly we came upon a large tract of Western yellow pine, through which the same fire had swept, but its only effect was to slightly char the heavy bark of these trees, and none of them were killed; it looked like an oasis in a desert. None of the large yellow pine operators that I know anything about allow their standing timber to be turpentinized, and consequently the fire loss in the South is practically nothing. I think this is a fact that should be plainly understood.

"In regard to careless lumbering, I would like to make the point that there is not as much of this as you seem to think. Although the tremendous slump in the price of lumber has put the selling price below the cost of production, there has been practically no reduction in the price of yellow pine standing timber, and it is still selling at about \$5 a thousand, or \$50 an acre, and it stands to reason that no lumberman can afford to pay this price for timber and leave anything in the woods that can be sold at a profit, and in this section the only stuff left in the woods, even at the present low prices of lumber, are rotten logs and top logs which are too coarse to produce lumber that can be sold at a profit. A large amount of the so-called waste in the woods is utilized by native farmers for fuel, and for fuel in the locomotives, steam skidders and steam log-loaders in the logging operations.

"In regard to waste in the sawmills, would say that this is mostly true of small operations that are conducted by men of very limited capital and little experience. In the larger and better-conducted plants there is only a nominal amount of waste. At our plant here our surplus fuel is used, first, to fire a battery of six large drykilns; second, to furnish 1000 horse-power for a large cotton mill; third, to furnish fuel for a large oil and fertilizer mill; fourth, to furnish power for city water-works. The best of the slabs are used to make lath and box material, and the stuff that is left is fit only for fuel.

"In regard to the utilization of sawmill waste for making paper and turpentine, I would like to state that referring to the paper industry it requires an enormous investment to make paper from yellow pine refuse.

"In regard to the production of turpentine and rosin and other by-products by distillation, would say that this is a subject to which the Southern lumbermen have given a great deal of thought and on which they have spent enormous sums of money.

"The trouble with the handling of by-products at the present time is that no well-posted business man wants to go into it unless there is a chance to make some money, and at the price at which by-products have been selling for the past year there is no chance for profit."

[In publishing, with pleasure, these extracts from Mr. Gardiner's letter, as of interest to the lumber industry,

we suggest that he seems to have missed the main point of the editorial to which he takes exception. The purpose of that editorial was not to discuss only one branch of lumbering or one establishment, but to call attention to the opportunities for profit in the whole field in developing economies in methods of handling timber resources and in making better use of so-called wastes. We were moved to write on the subject by announcement that certain lumber interests contemplate investigation of all possibilities. Our statements were based upon the work of experts, as was indicated in the body of the editorial, and were designed to open up lines of thought on the subject.—Editor MANUFACTURERS RECORD.]

### Building Big Lumber Plant.

Construction is progressing on the plant of the Andrews Manufacturing Co., Frank Buell, president, Andrews, N. C. The main factory building, 256x148 feet, has been completed, and the others will at once be built. Plans for the enterprise include central power-house, of brick construction, for boilers and electric generators; 120x80-foot planing mill; 120x80-foot flooring (plain and quartered oak) mill of 30,000 feet daily capacity; 126x44-foot drykiln with capacity of 200,000 feet of lumber; another kiln, of same specifications, for flooring; central power plant exhaust steam to furnish heat for drykilns; waste (except chestnut) to furnish fuel for power plant; chestnut sawdust and shavings to be gathered by fans and blown to tannic-acid plant one-half mile distant; remove Whiting (N. C.) mill to Andrews. In connection with the plant at Andrews the company will cut the timber on 8000 acres of hardwood and hemlock timber land in Graham county.

## TEXTILES

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

### The Cotton Movement.

In his report for March 19 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 231 days of the present season was 12,720,222 bales, a decrease under the same period last year of 888,812 bales. The exports were 6,148,334 bales, a decrease of 1,396,082 bales. The takings were, by Northern spinners, 2,063,229 bales, a decrease of 160,911 bales; by Southern spinners, 2,374,059 bales, a decrease of 226,162 bales.

### Southern Bleachery Co.

With an authorized capital stock of \$25,000, the Southern Bleachery Co. of Rome, Ga., has been incorporated by J. F. Allison, A. S. David and R. L. Crutchfield, all of Calhoun, Ga. It is the company's plan to build a bleachery for cleaning cotton linters, the product to be used in manufacturing explosives and absorbents. Mr. Allison and his associate incorporators were recently mentioned as planning this enterprise.

### Hillside Cotton Mills.

Hillside Cotton Mills, Lagrange, Ga., has awarded contract to T. C. Thompson & Bros., Birmingham and Charlotte, for the construction of three-story main mill, 19 warehouses, engine-room, boiler-room and 122 three, four, five and six-room cottages for operatives. Completion is expected by October 15, so that machinery can be in position for beginning production by January 1. Equipment contracts have been awarded as follows:

20,000 spinning spindles, 4000 to 5000 twister spindles, 175 cards, etc., Saco-Lowell Shops, Lowell, Mass.; engine, McIntosh & Seymour Corporation, Auburn, N. Y.; boilers, Lombard Iron Works & Supply Co., Augusta, Ga.; tank, R. D. Cole Manufacturing Co., Newnan, Ga.; chimney, Alphons Custodis Chimney Construction Co., New York. Cotton specialties will be manufactured and about 400 operatives will be employed. The architect-engineer in charge is the Park A. Dallis Company, Atlanta.

### Coats Hosiery Mill.

The Coats (N. C.) Hosiery Mill has been incorporated with \$10,000 capital stock and organized with the following officers: E. M. Henly, president; J. T. Coats, vice-president; N. T. Patterson, secretary-treasurer. It will erect a 70x24-foot \$800 frame building and install 41 knitting machines, boiler for steaming hosiery, hand press for pressing hosiery, etc. All machinery except boiler and press has been purchased.

### To Rebuild Batting Mill.

The Charlotte (N. C.) Cotton Fiber Co. will rebuild its cotton-batting mill recently destroyed by fire, and has let contract to R. L. Goode of Charlotte for erecting the buildings. These will include the main structure and two warehouses, of mill construction, with tar-gravel roof and sprinkler system, the cost to be \$15,000.

### To Double Capacity.

Plans have been adopted to enlarge and double the capacity of the Ensign Cotton Mills, Forsyth, Ga. An additional mill building will be erected and equipped with about 5600 ring spindles, 1400 twister spindles, electric power, etc., this being the present equipment. The company will also build a school and church for its operatives.

### Textile Notes.

Kentucky Cotton Yarn Co., Louisville, is rapidly completing the installation of its mechanical equipment for manufacturing coarse cotton yarns and carded cotton, the daily output to be about 10,000 pounds. This company's organization and its plans for a mill were heretofore detailed. W. C. Nones is president.

J. T. Bland Real Estate & Insurance Co., Columbus, Ga., plans organization of a \$150,000 company to build cotton factory at Phenix City, Ala., opposite Columbus.

Frank A. Dudley of the United Hotels Co., Buffalo, N. Y., and associates are reported as to build \$500,000 cotton mill at Birmingham, Ala.

Sellers Hosiery Mills, Burlington, N. C., will build two-story 70x50-foot addition and install finishing machinery.

## FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

### Malta Wants American Products.

Salvatore Azzopardi, Malta, writes to the MANUFACTURERS RECORD as follows:

"I acknowledge receipt of the MANUFACTURERS RECORD, which is very interesting. I am giving you a list of the chief goods which I handle and for which I have a good number of customers. To save time, when firms send quotations include data as to goods being c. i. f. Malta, less 3 per cent. discount at 30 days after reception of goods, or next four months against acceptance; also to quote prices in English money. I deal as commission agent, and also buy for my own account, general terms being 60 days after reception of goods. List

of goods wanted: Lard; provisions; dry goods; hosiery; haberdashery; boots; shoes; tennis flannels; flannel shirts; underwear; toys; tweed caps; earthenware; glassware; lamps; kitchen utensils; cutlery; tapestry; carpets; flowers; feathers."

#### For Mining and Automobiles.

Manuel Caragol & Son, steamship agents, importers and exporters, 127 Water street, New York, write to the MANUFACTURERS RECORD as follows:

"We are interested in the following articles to be made to our specifications: Chassis pressed in cold steel; pressed steel rear and front axles; pressed steel brake drums; silica manganese springs; all kinds of small parts; for manufacturing automobiles. We are experiencing considerable trouble with certain specifications we have received from a coal mining syndicate in Spain, and think that you might be of some assistance to us in locating manufacturers who would be able to furnish the goods. We especially wish quotations on a platform for transferring coal cars to different tracks in the yard, the power to be supplied by an electric transfer table running on the platform. We have full specifications and blueprints of layout of yard. For this same concern we are also interested in safety lamps for miners, and have a fair size order to place. We take this opportunity to state that we are developing this Spanish business, and would be glad to be put in touch with any manufacturers interested in this country."

#### Wants to Represent Manufacturers.

George C. Stringo, The Piraeus, Greece, writes to the MANUFACTURERS RECORD as follows:

"In consequence of the state of war among the nations of Europe, it is not possible for us to obtain a large number of their manufactured products. We find ourselves obliged to apply to the American markets. In consequence of the favorable position in which I find myself after acting as agent for more than 20 years, I am able to say that a large number of American manufacturers of articles, not only primary necessities, but also those that are luxurious, could easily find an outlet for their goods in our market, not only on account of the prices at which they would deliver them, but also on account of the quality, which leaves nothing to be desired."

#### For Spanish-American Trade.

H. L. Hill, P. O. Box 154, New Smyrna, Fla., writes to the MANUFACTURERS RECORD as follows:

"In connection with extensions of American trade to foreign fields, I have had 10 years' experience in various Spanish-American countries as operating official for railroads, lately in Mexico; speak the language, know their requirements, and, being familiar with conditions of trade and travel, can plan an economical itinerary. I would be glad to take on 10 non-competitive lines of railway and tram equipment and supplies for representation in Spanish America, the expense to be prorated among the 10 concerns, giving them representation at a small cost."

#### Safety Matches and Kola Wine.

C. D. Davies, P. O. Box 163, Kingston, Jamaica, B. W. I., writes to the MANUFACTURERS RECORD as follows:

"I shall be glad if you will give me the names and addresses of the principal packers of safety matches in the States who are likely to be interested in the export business. I do not know if shippers in the States are able to supply kola wine. If so, I shall be glad to receive their names and addresses."

#### Monuments of Marble, Granite, Etc.

Thomas Grant, P. O. Box 492, North Sydney, Nova Scotia, Canada, writes to the MANUFACTURERS RECORD as follows:

"Kindly tell me the addresses of some manufacturers of mural monuments of marble, granite, etc., as I intend carrying this line of goods here. Would like to get some manufacturers' catalogues and photographs of tombstones."

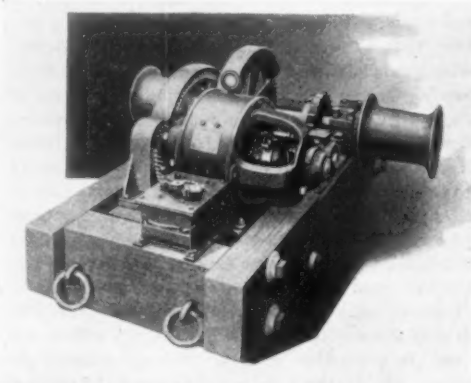
## MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

#### A Portable Winch.

The construction of the New York Subway is said to have necessitated the building of the portable motor-driven winch shown in the illustration. It has, however, since demonstrated its usefulness in many other fields.

When used for lifting material out of the subway a trestle or light framework carrying a sheave is placed



DOBBIE PORTABLE WINCH.

directly over the opening. The hoisting rope is passed over the sheave, given two or three turns around the friction drum, the motor started and the slack paid off as the material is hoisted. When used to assist teams in hauling loads up heavy grades, one end of the rope is fastened to the wagon tongue and the other end given several turns around the friction drum. Current is obtained from the 550-volt trolley circuit.

The winch is manufactured in two sizes by the Dobbie Foundry & Machine Co. of Niagara Falls, N. Y. The small outfit operates at a rope speed of 152, and the large one at 178 feet per minute. Westinghouse electric compound-wound type SK motors at 5 and 7½ horse-power, respectively, which are manufactured by the Westinghouse Electric & Manufacturing Co. of East Pittsburgh, Pa., are used to drive these light, compact and easily portable outfits.

#### Type "B" Erie Steam Shovel.

An Erie full revolving steam shovel, Type "B," manufactured by the Ball Engine Co. of Erie, Pa., in addition to combining distinct and patented features employed in all Erie shovels, is said to be primarily designed to cut to accurate grade and built throughout to carry a real three-quarter cubic yard dipper without over-



ERIE STEAM SHOVEL.

taxing the machine and without imposing excessive strain upon the parts of the operating mechanism. Sufficient power and strength to handle any ordinary materials

as well as the more difficult ones, such as stiff clays, the lighter classes of shale, hard pan, etc., is provided, and under ordinary working conditions this Type "B" shovel is said to have a capacity of from 50 to 60 cubic yards per working hour.

The shovel revolves through a full circle, giving extra reach both in width and height, and permits the operator to dig or dump at any angle, thus enabling the machine to be handled successfully in constrained places. It is simple in operation, being controlled by only three throttle levers and one foot brake.

Exclusive features of Erie shovels include an automatic crowding device for controlling the crowding engines so that while the power from the hoisting engines lifts the dipper through the material, the dipper is automatically forced into the material by the crowding engines at the proper rate, causing the dipper teeth to follow the floor bottom in a straight line. The dipper automatically returns to the grade on which the shovel is operating at the beginning of each digging motion, and does not have to be carefully adjusted. Changes in grade may be effected by shifting the automatic control latch lever into the proper notch for the grade desired. With this attachment a maximum crowding reach of 8 feet 6 inches on floor bottom is said to be obtained before it is necessary to move up. Cuts as wide as 35 feet on the floor bottom can be made and teams or cars can be loaded 23 feet from the center of the shovel and 8 feet above the floor level.

Erie shovels are designed so that special equipment may be installed if desired. A boom hoist can be added for derricking the boom when the shovel is to be used for ditching purposes, or a special boom and apparatus can be installed for handling a clamshell or an orange-peel bucket. A long dipper handle, permitting the shovel to dig sewer trenches up to 14 feet in depth, is interchangeable with the standard dipper handle. Apparatus for operating a drag-line bucket may also be installed. When provision is made for the reception of these attachments the fact that they can be used is claimed not to detract in any way from the efficiency of the machine when it is operated as a standard steam shovel.

A single open-hearth steel casting, thoroughly annealed and heat-treated, forms the frame of the truck which supports the machinery. Extra heavy axles and interchangeable large diameter traction or car wheels are provided. By mounting the steering axle on a swivel, which is controlled by both power and hand-steering devices, a three-point suspension of the truck is obtained.

Hoisting engines of the vertical, double reversing type, mounted on broad bases of liberal dimensions, with cylinder heads of the engines securely tied together by a rigid casting to prevent vibration, provide the motive power. All gears are of steel, and the spur gears and pinions have machine-cut teeth. A direct-acting steam ram sets the hoisting friction clutch. The boom is constructed of carefully selected white oak, armored with steel, from which a dipper handle of the same material and construction is operated. Vertical multi-tubular type boilers, built in accordance with standard requirements, are used.

Every detail in the design and construction of Erie shovels is said to be of the highest grade, and each machine is built throughout in accordance with the most advanced engineering practice. Complete specifications giving full information as to details of construction of all parts will be furnished to interested persons upon request to the company.

#### Busy.

A. W. Haiss, vice-president of the George Haiss Manufacturing Co., New York, informs the MANUFACTURERS RECORD that at present the company has so many orders for its machines that it would be inadvisable to advertise them any more than is being done.

#### Wants 150,000 Yards of Cloth.

The Depot Quartermaster's Office, Major Geo. H. Penrose, D. Q. M., Philadelphia, receives bids until April 12 for furnishing 150,000 yards of olive drab cotton cloth.



## AN INTERESTING UTILIZATION OF A SMALL WATER-POWER DEVELOPMENT



POWER-HOUSE AT OHIO C. BARBER FERTILIZER CO.'S PLANT.

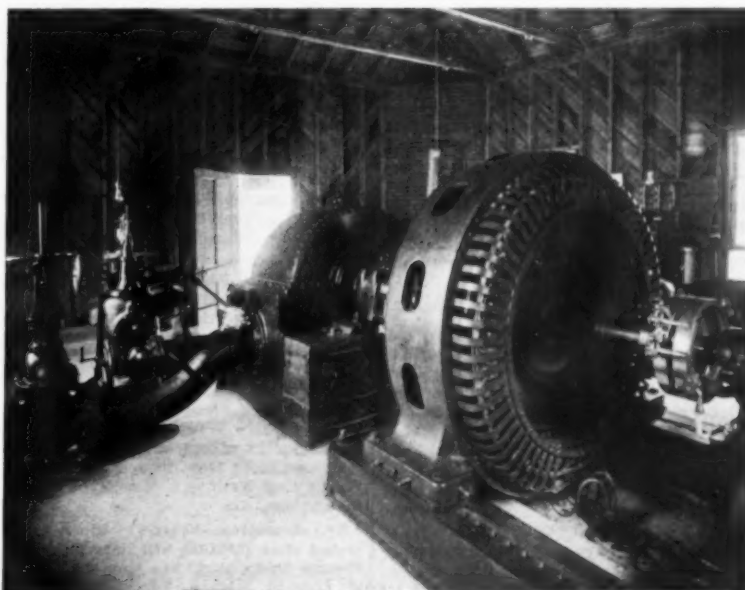


HAULING MATERIAL FROM LIMESTONE QUARRIES TO PULVERIZING PLANT

Typifying the utilization of the available water-power opportunities in many sections of the South which can be developed by harnessing small streams at a very reasonable cost for power produced is the hydro-electric plant of the Ohio C. Barber Fertilizer Co. in Alleghany county, Virginia, for supplying the electric energy to its limestone quarries and pulverizing plant at Barber, Va.

The Ohio C. Barber Fertilizer Co., which has general offices in the Second National Bank Building, Akron, O., one year and a half ago purchased 1100 acres of land on which was a deposit of precipitate lime, or travertine, which has been and is being formed by deposit at the falls of a stream several miles below where it debouches from a spring at an elevation of 800 feet, with an average flow of 500 cubic feet per minute. Extent of this limestone deposit, which has been accumulating for thousands of years by the action of the stream on the limestone formation through which it passes, is said to be so great that 1000 tons a day for 300 years can be secured. This large deposit is thought to have been caused by the stream, which, in pouring over the falls, produced a mist that was blown back against the face of the cliff, and as the stream contained a high percentage of limestone solution, this part solidified. Not only has the stream been the agency that was responsible for the formation of this deposit, but being adaptable to water-power purposes on account of its elevation and volume of flow, it has been harnessed to develop the valuable deposit of limestone it has produced.

For the purpose of developing this vast deposit so as to furnish it to ferti-



INTERIOR OF POWER-HOUSE SHOWING PELTON WATER-WHEEL DRIVING GENERATOR.

lizer manufacturers as a filler and to the farmers of the South as a soil sweetener and as a plant food, the company was organized, and, at an expense of \$25,000, secured the water rights to the stream and installed a hydro-electric plant on its property which is now developing 400 horse-power. The plant consists of a 20-inch spiral riveted pipe line one mile long, which is connected to a Pelton water-wheel, manufactured by the Pelton Water Wheel Co., 19th and Harrison streets, San Francisco, Cal., with New York offices 90 West street, direct connected to a 500 K. V. A. alternator manufactured by the Westinghouse Electric & Manufacturing Co. of East Pittsburgh, Pa. The equipment develops a 3-phase, 60-cycle, 2200-volt circuit. Also by means of a 75-horse-power direct-connected set a 500-volt direct current is developed for operating an electric railway which runs from the town of Barber to the company's quarry. Alternating current is used in driving the various motors of the plant.

At the quarry is operated a Gates gyratory crusher and the necessary elevators, and from this point the crushed rock is transported to the plant at Barber, where it first passes through a rotary dryer, then to a Jeffrey pulverizer, manufactured by the Jeffrey Manufacturing Co., 925 N. 4th street, Columbus, O., and thence to storage bins, from which it is loaded direct into cars for shipment.

General Manager L. M. Latta reports the company has so far invested about \$100,000, and, owing to its being behind in filling orders, plans are being formulated to double the present capacity of 100 tons per day.

## USING LOCAL MATERIALS.

## An Object-Lesson in Construction in a North Georgia Enterprise.

[Special Correspondence Manufacturers Record.]

Atlanta, Ga., March 20.

Unusual phases of mountain road and bridge construction are involved in the development of the Tate educational enterprises near Tate, a small city in the foothills of the North Georgia mountains. The Tate educational enterprises have plans by E. B. Cooke, a landscape architect of Atlanta, for the general development of 5000 acres of mountain land in the vicinity of Tate. The object of the corporation is to better the conditions of the mountaineers by establishing a school that will train its students to utilize the resources of the district in which they reside. Both roads and bridges typify the spirit of the proposed institution, as they are built almost entirely from materials obtainable in the mountain section.

The construction work completed to date, under the supervision of Mr. Cooke, is three miles of roadway



and two bridges. The average width of the road is 18 feet. By proper drainage, which in this case has been provided for, this kind of graded road makes a substantial mountain highway.

The bridge shown in the accompanying photograph is 225 feet long, 30 feet high and 18 feet wide. The only other material used in its construction besides the hewn timbers are iron tie-rods. As the timbers used have been selected with great care, the life of the bridges is expected to extend over quite a period of years, with only the renewing of the hand railings and flooring every decade or so.

The development of a lake is proposed that will furnish power for a hydro-electric plant near the site of one of the bridges. This plan, however, is entirely tentative.

While the financial depression has temporarily stopped the construction, the work completed will serve as an example of what can be done with resources obtainable in a mountainous country even in the face of difficulties that, at first glance, seem impossible to surmount. Serviceable roads and bridges such as have been built by the North Georgia educators will undoubtedly help solve the problem of mountain highways in the future.

ROY G. BOOKER.

# Construction Department

## IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS' RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers' Record is mentioned.

### DAILY BULLETIN

The Daily Bulletin of the Manufacturers' Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers' Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers' Record.

### BRIDGES, CULVERTS, VIADUCTS

Ala., Goshen.—Pike county will construct steel-concrete bridge over Conecuh River at Smiley's Crossing, near Goshen; County Commrs., Troy, Ala., receive bids until Apr. 21; W. S. Keller, State Highway Engr., Montgomery, noted in February. (See Machinery Wanted.)

Fla., Bradentown.—Manatee county defeated \$41,500 bond issue to construct 2 bridges. (Lately noted.)

Fla., Bradentown.—Manatee County Sarasota-Venice Road and Bridge Dist. voted \$250,000 bonds to construct 34 mi. sand-asphalt roads and bridge to Sarasota Key. Address E. C. Bruce, Sarasota, Fla. (Lately noted.)

Ky., Madisonville.—Hopkins county, Will T. Mills, County Judge, will erect lately-noted bridge across Pond River, connecting McLean county; will let contract; address G. W. Sybert, Madisonville, Ky., or J. W. Brown, Hanson, Ky.

Ky., South Portsmouth.—Chesapeake & Ohio Northern Ry., W. Michel, Chief Engr., Columbus, O., has let all contracts for constructing bridge across Ohio River from above mouth of Little Scioto River, near Sciotoville and Portsmouth, O., to South Portsmouth, Ky.; estimated cost \$1,500,000; double track; 2 spans of 775 ft. each; approaches 1900 ft.; total length 3000 ft.; 27 concrete piers for bridges and approaches; use 16,000 tons steel and 30,000 yds. concrete masonry; Dravo Contracting Co., Pittsburgh, Pa., contractor for substructure; McClintic-Marshall Construction Co., Pittsburgh, contractor for superstructure. (Mentioned in Nov., 1914.)

Miss., Tupelo.—Lee county will erect 60-ft. span steel bridge; let contract Apr. 5; plans, etc., with Chancery Clerk; L. G. Smith, Engr., Tupelo. (See Machinery Wanted.)

Okl., Tulsa.—Tulsa county votes Apr. 12 on \$300,000 bonds to construct concrete bridge across Arkansas River; Lewis Cline, County Clerk. (Previously noted.)

Tenn., Manchester.—Joint Bridge Building Committee of Bedford and Coffee counties let contract Nashville Bridge Co., Nashville, Tenn., at \$3400 to construct Normandy-Gould bridge.

Tenn., Memphis.—City will construct outfall culvert at North Memphis pumping sta-

tion as follows: 175 lin. ft. reinforced concrete culvert, 5000 lin. ft. wood piling driven, 2000 cu. yds. excavation, 3000 lbs. extra steel reinforcement in place and 50 cu. yds. extra concrete; C. C. Pasby, City Clerk, receives bids until Mch. 23; E. H. Crump, Mayor. (See Machinery Wanted.)

Tex., Seabrook.—Galveston County Commrs. will have plans prepared by C. A. Sias, County Engr., for bridge across Clear Creek at Seabrook, to be constructed jointly by Galveston and Harris counties, each to pay one-half of cost.

Va., Stuart.—Patrick county will construct steel bridge 100 ft. long over Mayo River; concrete substructure; bids received at County Clerk's office until Apr. 5; G. P. Coleman, State Highway Commissioner, Richmond. (See Machinery Wanted.)

W. Va., Ranger.—Lincoln County Court, Hamlin, W. Va., is having plans prepared by Oliver & Maupin, Engrs., Huntington, for steel bridge across Guyan River; engineers will also superintend construction.

W. Va., Smithfield.—Wetzel county will construct concrete or steel bridge with concrete floor across Fallen Timber Run, about 1 mi. from Smithfield; County Commrs., New Martinsville, receive bids until Apr. 6; S. Myers, Clerk. (See Machinery Wanted.)

W. Va., Wayne.—Wayne County Court let contract to Cincinnati company to build concrete bridge at Hubbard's Hollow; cost \$12,000.

### CANNING AND PACKING PLANTS

Ark., Newark.—Newark Canning Co., W. A. Isrig, Secy., lately noted to establish cannery, is asking bids on equipment for plant of 30,000 cans daily capacity; use sanitary cans; machinery to be purchased by Apr. 1. (See Machinery Wanted.)

Fla., Palmetto.—Manatee Fruit Co., W. L. Preston, Pres., let contract G. A. Miller, Tampa, Fla., to erect 178x200-ft. packing-house with 80x100-ft. ell; cost \$20,000; mill construction; iron roof; plans by Victor Grimmer, Tampa. (Proposed establishment, machinery wants, etc., previously noted with daily capacity 6 cars oranges and grapefruit.)

Ga., Griffin.—Johnson Packing Co. Incptd. by David S. Johnson, F. M. Binford, A. H.

Chappell and others; plans to build packing plant, cannery, abattoir and ice factory.

La., Farmerville.—W. P. Chandler is asking prices on machinery for small fruit and vegetable canning factory. (See Machinery Wanted.)

Md., Baltimore.—Wm. Schluderberg & Son, 4th and Bank Sts., have plans by C. B. Comstock, 110 W. 40th St., New York, for and let contract to Consolidated Engineering Co., 243 Calvert Bldg., Baltimore, to erect meat storage-house at 1727-29 Eastern Ave.; 40x68 ft.; 2 stories; reinforced concrete. (Lately noted.)

Md., Crisfield.—McMenamin & Co. of Hampton, Va., is reported to build crab cannery to cost \$50,000.

Okl., Bigheart.—E. E. Wattman and others contemplate establishment of cannery. (See Machinery Wanted.)

N. C., Southport.—Richard Doshier and Wm. St. George plan to erect shrimp cannery; daily output 10,000 to 12,000 cans.

Tenn., Covington.—Covington Cotton Oil Co., capital stock \$125,000, Incptd. by Norman H. Murphy, M. L. Keathley, John Dearing and others; acquires Phoenix Cotton Oil Co.'s oil mill and ginneries in Covington and Tipton county.

Texas (or Florida).—John V. McNeil, 6136 Ingleside Ave., Chicago, Ill., contemplates establishment of canning and preserving plant in the South; location not decided; Texas or Florida under consideration.

Va., West Point.—John T. Brown, Clay Bank, Va., will build cannery; has equipment for plant having daily capacity of 50,000 cans.

### CLAYWORKING PLANTS

N. C., Old Fort.—Bricks—Catawba Falls Ry. Co. is reported to establish brick works. (See Lumber Manufacturing.)

W. Va., Wayne.—Bricks.—Wayne Brick & Tile Co. (H. S. Heffner of Barboursville, W. Va., and others) will establish brick plant; has 28 acres land containing clay and shale deposits.

### COAL MINES AND COKE OVENS

Ala., Empire.—Slipsey Coal Mining Co., R. F. D. No. 1, will install storage bins and washing plant with 8 hr. capacity 200 tons coal; cost about \$6000; let contract to Montgomery Coal Washing & Manufacturing Co., Birmingham, Ala.

Ky., Lexington.—Kentucky River Corp., capital stock \$3,000,000, will be Incptd. by C. Bascom Slem, Big Stone Gap, Va.; J. W. M. Stewart, Ashland, Ky.; John E. Buckingham, Paintsville, Ky.; J. N. Camden, Versailles, Ky., and D. A. Langhorne, Richmond, Va.; consolidate Kentucky River Consolidated Coal Co., Haly Coal Co., Henry Coal & Coke Co., Letcher Coal & Coke Co. and Slem Coal Co.; last named owns majority stock of the other companies; owns 100,000 acres compact coal land in Knott, Perry, Letcher and Leslie counties; will extend developments, expecting to have 20,000 acres under full development within 2 years; will mine, lease to other companies, etc.; arrange with railway companies for extensions to provide transportation facilities.

Ky., Louisville.—Booth Coal Co., capital \$15,000, Incptd. by P. S. Booth, L. H. Harris and Fred Powell.

Ky., Madisonville.—H. F. Allen, Pres. Deepwater Coal & Coke Co., Evansville, Ind.; L. W. Searles, Birmingham, Ala., and associates are reported as planning organization company to acquire 17 coal mine enterprises, including 180,000 acres mineral rights with mining plants.

Ky., Seabree.—Seabree Mining Co., capital \$30,000, Incptd. by Chas. A. Sine, Jas. B. Brown, Percy B. Smith and others.

W. Va., Beckley.—East Gulf Coal Co., capital \$100,000, Incptd. by J. L. Baumgardner, A. D. Preston, S. M. Miller and others.

W. Va., Mullens.—Wood-Sullivan Coal Co. (lately noted Incptd., capital stock \$100,000) organized; temporary offices, Mullens, W. Va.; C. H. Mead, Pres., Mullens; J. A. Wood, V. P., Sullivan, W. Va.; J. E. Toliver, Secy., Beckley, W. Va.; J. C. Sullivan, Mullens, Treas.-Mgr.; develop 1350 acres on Stone Coal Creek; Philip Konrad, Constr. Engr., Kanawha Falls, W. Va. (See W. Va., Mullens, Mead-Toliver Coal Co.)

W. Va., Mullens.—Harty Coal Co., J. C. Sullivan, Treas. and Mgr., is installing previously-noted equipment for development of 1044 acres; estimated daily capacity, 1000 tons; has arranged for tipples of 2500 tons daily capacity, haulage motors and all electrical equipment; asks prices on steel mine cars, mining machines, and building materials; Philip Konrad, Constr. Engr., Kanawha Falls, W. Va. (See Machinery Wanted.)

W. Va., Mullens.—Mead-Toliver Coal Co. organized; temporary office, Maben, W. Va.; J. C. Sullivan, Pres., Mullens, W. Va.; J. A. Wood, V. P., Sullivan, W. Va.; J. E. Toliver, Secy., Beckley, W. Va.; C. H. Mead, Treas. and Mgr., Maben, W. Va.; will develop 1350 acres on Stone Coal Creek, Raleigh county; daily capacity not less than 1000 tons; Philip Konrad, Constr. Engr., Kanawha Falls, W. Va.; install machinery to include retarding conveyor, tipples equipment, electrical equipment, mining machines and mine cars; date for opening machinery bids not set; construction involves building 6 mi. branch railway; lately noted Incptd., capital \$100,000. (See W. Va., Mullens, Wood-Sullivan Coal Co.)

W. Va., Widemouth.—American Coal Co. of McComas, W. Va., let contract to Columbus (O.) company to reconstruct steel tipples costing \$175,000 with view to developing several hundred acres of coal land around Crane's Nest.

### COTTON COMPRESSES AND GINS

Tex., Mont Alba.—Mont Alba Gin Co., capital stock \$3000, Incptd. by B. H. Brooks, W. P. Wilson and G. L. Beasley.

### COTTONSEED-OIL MILLS

N. C., Raeford.—Hoke Oil & Fertilizer Co. will rebuild cottonseed-oil mill reported burned at estimated loss of \$20,000.

Tex., Beaumont.—Beaumont Cotton Oil Mill Co., capital stock \$100,000, Incptd. by J. O. Adams, C. Wesley Savis and Hugh Donley.

### DRAINAGE SYSTEMS

Fla., Davenport.—Davenport Drainage Dist., Chas. A. Parrish, Pres., Supvrs., let contract (lately noted) to W. B. Williams, Oviedo, Fla., to construct main canal; canal 7½ mi., 14 to 22-ft. base; about 35 mi. laterals, 3-ft. base, 1 to 1 vertical slopes; canals and laterals are about ¾ through muck all cut to grade; 55 bridges on laterals and main canals, wood; no date set for laterals; cost of canals about \$85,000; lands mainly for truck and hay.

Fla., Kissimmee.—Taft Drainage Dist., J. D. Clark, Pres. (lately noted organized), will construct 3 main canals, 10 laterals, 1 connecting ditch, averaging 20, 10 and 15 ft., respectively; estimated cost \$80,000; drain 45,000 acres in southern part of Orange county for farming; date of opening bids not yet set; R. H. Ludlam, Chief Engr., Kissimmee.

Tenn., Union City.—Obion River Drainage Dist. will construct about 1,564,300 cu. yds. levee work, with floating dredge; about 21,700 yds. ditch work with floating dredge; 3 reinforced concrete sluiceways, making about 600 yds. concrete, etc.; also clear about 500 acres right of way for levees and ditches; Directors of Dist., J. A. Coble, Secy., receives bids until Apr. 12. (See Machinery Wanted.)

### ELECTRIC PLANTS

Ark., Horatio.—Horatio Electric Co., S. G. Davis, Mgr., may be addressed relative to lately-noted electric-light-plant construction.

Ark., Arkansas City.—Lambe & Denmarke Light & Water Co. will install electric-light plant. (See Water-works and Machinery Wanted.)

Fla., Panama City.—City granted electric-light franchise to J. B. DeH, who will organize corporation to take over franchise; plans not yet definite.

Ga., Jefferson.—City invites bids until Apr. 19 for hydraulic and mechanical equipment and appurtenances as follows: 50 H. P. gasoline engine, 37½ K. W. 3-phase 60-cycle generator (belted), switchboard panel and appurtenances, 350-gal.-per-minute motor-driven centrifugal pump under 50-ft. head, 350-gal.-per-minute centrifugal pump, under 250-ft. head. Solomon-Norcross Co. of Atlanta is

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers' Record is mentioned.



charge of engineering. J. N. Holden, Mayor. (Lately noted.)

Ga., Lexington.—G. W. Phelps and E. C. C. of Athens are reported interested in construction of transmission line to furnish electricity for lighting and power to Lexington, Comer and Crawford, Ga., from generating plant of L. F. Edwards at Watson Shoals.

Ky., Frankfort.—City Council is considering construction of electric-light plant. Address The Mayor.

Ky., Hazard.—Hazard Power Co., capital \$25,000, inceptd. by L. L. Stone, Mrs. L. L. Stone and J. D. Francis.

Ky., Owenton.—W. E. Arnold, owner of local electric-light plant, is reported as contemplating purchase of 30 H. P. oil engine.

Ky., Prestonsburg.—Prestonsburg Electric Light Co. will build 8-mi. transmission line from Van Lear, Ky., to Prestonsburg; 11,000-volt 3-phase line on 35-ft. chestnut poles; within few days will be ready to let contract. Address L. L. Stone, Mgr. Sandy Valley Light & Power Co., Pikeville, Ky. (See Machinery Wanted.)

Ky., Woods.—Floyd Mining Co. of Emma, Ky., will build electric plant to furnish power for 8 or 10 street lamps and to operate machinery in mines; equipment will consist of boiler, engine, generator and switchboard; require about 4000 ft. wire; Henry L. Coo, Mgr.

La., White Castle.—City Council is considering installation of electric-light plant. Address The Mayor.

Md., Baltimore.—Consolidated Gas, Electric Light & Power Co., Lexington and Liberty Sts., authorized increase in capital stock from \$20,000,000 to \$30,000,000. (Lately noted proposed.)

Md., Baltimore.—Board of Awards let contract Richard Morton, 839 Equitable Bldg., to install (in high pressure fire service pumping station on South St.) geared turbo-generator outfit of 500 K. W. capacity to cost \$18,000; furnish electric lighting for City Hall, Courthouse, Health Dept. Bldg. on Courtland St., City Hall Annex No. 2, Guilford Ave., Old City Hall on Holliday St. and City Hall Plaza.

Miss., Hattiesburg.—A. Fairley, Commr., states building of lately-noted electric-light plant will be considered in 1916.

Mo., Clarksburg.—City ratified at election franchise granted to G. P. Wilson to construct electric-light system.

Mo., Novinger.—Merchants' Light & Power Co. contemplates building boiler-room; also plans to purchase and install 100 H. P. boiler.

Mo., Sweet Springs.—City contemplates purchasing and installing 50 or 60 H. P. crude-oil engine and 3½ or 45 K. W. 3-phase alternating-current generator for municipal electric-light plant; J. J. Smith, Supt.

Mo., St. Louis.—Light & Development Co. contemplates purchasing and installing 500 H. P. oil engine and generator.

Mo., Stoutsville.—Stoutsville Garage Co. is considering plans to install electric-light plant.

Mo., Winfield.—Winfield, Foley and Old Monroe are reported to co-operate in construction of electric-light and ice plants; understood that power will be secured from North Missouri Light & Power Co. of New London. Address The Mayor, Winfield.

N. C., Kenly.—Town Commrs. granted franchise Buckhorn Power Co. to extend electric transmission system to Kenly; will connect with main line at Pine Level, about 7 mi. from Kenly.

N. C., Waynesville.—City votes May 4 on \$25,000 bonds to construct electric-light and power plant. Address The Mayor.

Okla., Lawton.—Comanche Light & Power Co. applied for 25-year franchise to furnish electricity.

Okla., Walter.—City is reported as negotiating with Comanche Light & Power Co. of Lawton to furnish electricity.

S. C., Charleston.—Standard Electric Co., capital stock \$10,000, inceptd. by W. M. Glasser and Jacob Glasser.

Tenn., Shelbyville.—Tennessee Valley Power Co. will rebuild electric-light and power plant reported burned at estimated loss of \$15,000.

Tenn., Trimble.—J. W. Dulin is reported to build electric-light plant.

Tex., Dallas.—Telluride Power Co., capital stock \$40,000, inceptd. by Elton Hoyt, I. G. Miller and W. W. Clark.

Tex., Floresville.—City Council granted franchise B. J. Carrio and others of Fort Worth to construct electric-light plant to cost about \$13,000; erect brick building; 30

street lights; also pump water from municipal water-works; operate as Floresville Light & Power Co.

Tex., Victoria.—City votes Mch. 27 on \$40,000 bonds to construct electric-light plant. Address The Mayor.

Va., Richmond.—Utilities Development Corp., capital stock \$1,000,000, chartered; Arthur J. Thompson, Pres., Wilmette, Ill.; J. L. Gossman, Secy., Chicago.

### FERTILIZER FACTORIES

Ala., Samson.—Morris-Holloway Guano Co. organized by W. H. Holloway, Ana Holloway, W. H. Morris and A. V. Sawyer; contemplates operating fertilizer mixing plant.

Mo., Washington.—Bone Products Co. organized with A. A. Tibbe, Pres.; Russell Tibbe, Secy.-Treas., both of Washington; W. E. Kelch, Mgr., Chicago; remodel and equip building at Main and Cedar Sts.

Va., Lynchburg.—Lynchburg Reduction & Fertilizer Co. (C. L. Probst and W. W. West), 1 Scott Bldg., organized to build plant in Amherst county, opposite Lynchburg; use carcasses of animals and slaughter-house offal; install rendering machinery.

### FLOUR, FEED AND MEAL MILLS

Ark., Cotton Plant.—Louis Blumberg will build flour mill.

Ga., Americus.—Wells Mills is reported to equip plant as flour mill.

Ga., Columbus.—Empire Flour Mills will build mill to replace burned plant; fireproof; 4 stories; 35x90 ft.; brick; concrete foundation; cost \$16,000.

S. C., Bamberg.—Jones A. Williams will install 50-bbl. flour mill; let contract Salem Foundry & Machine Works of Salem, Va., for equipment, to include roller mills, self-balancing sifter, Monitor cleaning machinery, etc.

S. C., Orangeburg.—Ayers & Williams will erect building in which to install 25-bbl. flour mill; let contract for machinery to Salem Foundry & Machine Works, Salem, Va.

Va., Roanoke.—T. W. Reedy of Star Milling Co., North Tazewell, Va., purchased Lambert's Mill on Tinkle Creek between Roanoke and Hollins; will remodel mill and install machinery; daily capacity of improved mill to be 75 bbls.

### FOUNDRY AND MACHINE PLANTS

Ky., Ashland.—Iron Fencing.—Norton Iron Works Co. will enlarge plant for field fence manufacturing department; building will be of steel, 62x132 ft., 5 stories and basement.

Va., Roanoke.—Bridges, etc.—Roanoke Iron and Bridge Works, capital stock \$125,000, incorporated; O. D. Oakley, Pres.; N. M. Johnson, Secy.-Treas., both of Salem, Va.

### GAS AND OIL ENTERPRISES

Ala., Anniston.—Gas Plant.—Alabama Power Co., F. H. Chamberlain, Gen. Mgr., Birmingham, let contract to United States Cast Iron Pipe & Foundry Co., Anniston, for gas-main enlargements and installing new apparatus, including 10,600 ft. of gas mains 4 to 8 in. in size; let contract Robinson Electric Construction Co., Anniston, for installing said pipe; is asking prices on 2 benches, 1 washer, 2 condensers, 1 scrubber, 2 purifiers and miscellaneous work, to be undertaken through Phoenix Construction Co., New York, under direction of R. J. McClellan, Ch. Engr.; plans for betterments lately noted. (See Machinery Wanted.)

La., Shreveport.—Federal League Oil Co., capital stock \$50,000, inceptd.; Jos. B. Tinker, Pres., Chicago; G. W. Hardy, V.-P., and H. L. Carnahan, Secy.-Treas., both of Shreveport; leased 17½ acres in Red River parish, 500 acres in De Sota parish and 20 acres in Caddo field; will drill test well in Red River field.

Okla., Lawton.—Blue Beaver Oil & Gas Co., capital stock \$25,000, inceptd. by J. M. Bellamy and J. A. Button of Lawton and E. S. Allen of Ashland, Okla.

Okla., Oklahoma City.—Lucile Oil & Gas Co., capital stock \$10,000, inceptd. by C. D. Coll, G. A. Nichols, J. A. Smith and Leroy Sadler.

Okla., Oklahoma City.—Palo Pinto Oil & Gas Co., capital \$50,000, inceptd. by M. F. Meadows, M. E. Sifers and John Tomerlin.

Okla., Spiro.—City voted \$10,000 bonds to construct natural gas system; system is to form unit to pipe line that will be built from LeFlore county gas fields to Fort Smith, where operators have entered into contract with Fort Smith Light & Traction Co. to purchase local gas.

Okla., Tulsa.—Benshal Oil Co., capital stock \$10,000, inceptd. by E. L. Kistler, L. D. Bradley and Benj. Marshall.

Okla., Tulsa.—Charles Oil Co., capital stock \$10,000, inceptd. by A. Cohen, C. A. Wiley and R. S. Follows.

Okla., Tulsa.—Greeley Oil Co., capital stock \$5000, inceptd. by E. R. Perry, R. R. Poe and M. Dickerman.

Tex., Gainesville.—Refinery.—Geo. A. Todd of Ponca City Refining Co., Ponca City, Okla., is reported to build refinery and construct pipe line from Healdton Field to Gainesville to supply crude oil.

Tex., Mexia.—Canyon Oil Co., capital stock \$10,000, inceptd. by J. S. Sweatt, G. L. Peyton and W. J. Keeling.

Tex., Sour Lake.—Alma Oil Co., capital stock \$4000, inceptd. by V. B. Daniels, J. S. Jackson and N. M. Morrison.

Tex., Taylor.—Drillers' Petroleum Co., capital stock \$3000, inceptd. by J. B. Lewright, Stanley Banks and H. Roos.

Tex., Thrall.—Company will be inceptd. by I. P. and C. M. Sessions, H. T. Coulter and G. C. Murray; secured leases on property at Thrall and will develop.

Tex., Thrall.—German-American Oil Co. inceptd. to develop oil wells in Thrall field; H. C. Meyer, Pres.; E. B. Phillips, V.-P.; R. H. Hale, Secy.-Treas., all of Rockdale, Tex.

W. Va., Spencer.—Gas Plant.—Depue Gas Co., capital \$10,000, inceptd. by H. M. Depue, J. W. Depue, Louisa D. McLellan and others.

### ICE AND COLD-STORAGE PLANTS

Ga., Griffin.—Johnson Packing Co. inceptd. by David S. Johnson and others; plans to build ice factory, etc. (See Canning and Packing Plants.)

Ky., Providence.—Providence Water & Utilities Co. will install ice-manufacturing equipment.

Md., Lonaconing.—Lonaconing Ice Co. incorporated by Adam Lebeck, Chas. Bowden, Thos. E. Boston, Lloyd Durst and others; acquired plant and equipment of Lonaconing Ice Mfg. & Storage Co.

Mo., Winfield.—Winfield, Foley and Old Monroe are reported to co-operate in construction of ice and electric-light plants. Address The Mayor, Winfield. (See Electric Plants.)

Miss., Meridian.—Swift & Co. (main office, Chicago, Ill.) let lately-noted remodeling contract to Standard Construction Co., Meridian; repairs and build cooler and ice bunker.

N. C., Greensboro.—Piedmont Ice & Coal Co., capital stock \$25,000, inceptd. by J. H. Dixon, W. M. Perdue, Ada L. Dixon and J. W. Monroe.

Va., Charlottesville.—Charlottesville Ice Co. will build cold-storage plant, etc. (See Miscellaneous Factories.)

Va., Richmond.—C. K. G. Billings will install one-ton ice machine at Curls Neck Farm; equipment purchased.

Va., Vinton.—C. J. Cook will build ice plant; purchased machinery.

### IRON AND STEEL PLANTS

W. Va., Charleston.—Tool Steel, etc.—Becker Steel Co. of America, capital stock \$750,000, inceptd. by A. J. Becker, Wilhelm Peters, Max Kuch, Wylie C. Margeson and H. T. Hornidge; has plant (previously described) to manufacture tool steel, etc.; branch of Stahlwerk Becker, A. G., Willich, Germany; American offices at 90 West St., New York.

### LAND DEVELOPMENTS

Ark., Jonesboro.—Herget Plantation Co., capital \$250,000, inceptd.; H. G. Herget, Pres.; C. G. Herget and W. P. Herget, V.-P., all of Pekin, Ill.; E. E. Randolph, Secy., and L. B. Randolph, Treas., both of Jonesboro.

Ark., Little Rock.—Twin City Development Co., capital stock \$30,000, inceptd.; J. E. England, Jr., Pres.; C. C. Kavanaugh, V.-P.; C. R. Ledbetter, Secy.-Treas.

Fla., Bartow.—Lake Garfield Nurseries Co., capital stock \$250,000, inceptd. by Geo. R. Johnston and Vet. L. Brown of Bartow and Lillian P. McMillen of Pittsburgh, Pa.; controls citrus fruit nurseries about 5 mi. from Bartow.

La., Shreveport.—Steele Home Construction Co. is proceeding with development of 170 acres, divided into 4 subdivisions, 2 of these subdivisions again divided into city lots and other 2 into ½-acre, 1, 2 and 3-acre tracts; extending street-car service; has

graveled main street, and now graveling cross streets, installing curbing, concrete sidewalks, etc., also water and sewer systems; constructing dwellings, mainly frame, and purchases material mostly locally.

Md., Chevy Chase.—Rock Creek Corp. incorporated with \$250,000 capital stock; Elmer Swearer, Pres., Stock Exchange Bldg., Baltimore; to develop 1,600,000 sq. ft. land adjoining Chevy Chase; Henry Jewell Brady, Atty., Stock Exchange Bldg., Baltimore.

Md., Hagerstown.—City, J. McP. Scott, Mayor, votes Mch. 22 on \$65,000 bond issue for purchase of 50-acre tract for public park.

Mo., St. Louis.—Switzer-McBlair Land Co., capital stock \$4800, inceptd. by Eugenia McB. Payne, Louis How, Jesse McDonald and others.

S. C., Charleston.—Givens Farms Corp., capital \$5000, chartered; C. L. Pearlstone, Pres.; Sam Cohen, V.-P., Secy. and Treas.

Tenn., Crandall.—Shady Farm Co., lately noted (under Mountain City) inceptd., capital stock \$10,000, will develop 500 to 1000 acres in Shady Valley, Johnson county; drainage and general improvements; Milton F. Campbell, Pres.; W. J. Moor, Secy.-Treas.

### LUMBER MANUFACTURING

Ala., Mt. Vernon.—Mecklin Lumber Co., capital stock \$30,000, inceptd.; W. H. Mecklin, Pres.; Chas. Louterback, V.-P.; Mark H. Mecklin, Secy.-Treas.

Ala., Tuscaloosa.—Fox Henderson, Pres., Farmers & Merchants' Bank, Troy, Ala.; Geo. Walte, Sanford, Ala.; J. E. Henderson, Enterprise, Ala., and associates are reported as having purchased extensive acreage Tuscaloosa county timber land; planning construction large mill, 15 mi. railway into timber, etc.

Ark., Blanchard Springs.—Union Lumber Co., capital \$10,000, inceptd. by J. T. Lewis, C. H. Lewis and L. W. Mason.

Ky., Albert.—Newcomb Lumber Co. inceptd. by C. T. Hay, H. C. Smith and Howard Lewis.

Ky., Jenkins.—Greenbrier Lumber Co. (lately noted inceptd., capital stock \$30,000) organized; M. H. Foerster, Pres.; C. E. Blair, V.-P.; W. S. Perry, Secy.-Treas.; advises: "Lumber will be manufactured by contract from timber owned by us; ready to make shipments about Jan. 1."

Ky., Louisville.—Holly Ridge Lumber Co., capital \$150,000, inceptd. by L. H. Wymond, W. A. Watts, W. H. Linton, Jr., and E. B. Norman.

Ky., Louisville.—Holly Ridge Lumber Co., capital stock \$150,000, inceptd. by L. H. Wymond, W. A. Watts and W. H. Linton, Jr., of Louisville and E. B. Norman of Vicksburg, Miss.

Ky., Pine Top.—Tandy Martin and others purchased timber property on Troublesome and Carr's Fork creeks; will install mills.

Ky., Shelby Gap.—J. L. Bentley and others purchased 500-acre timber tract on Marshall's Branch.

N. C., Greenville.—Piedmont Hardwood Mfg. Co. will rebuild plant reported burned at loss of about \$300.

N. C., Brevard.—Montrose Lumber Co. is reported to build mill to manufacture lumber, shingles, lathes, etc.

N. C., Old Fort.—Catawba Falls Ry. Co. is reported to have purchased 5000 acres timber land tributary to Old Fort; install sawmill; build narrow-gauge railroad from Old Fort to timber tract, 6½ mi.; establish brick works; build hotel at Catawba Falls, 3½ mi. from Old Fort; construct dam at Catawba Falls (water plunge being 730 ft.) sufficiently high to cover with water about 75 acres land, making lake 250 ft. above sea level.

Va., Martinsville.—T. E. Lester, Figaboro, Va., will build lumber mill; has equipment.

W. Va., Charleston.—L. O. Steinback Lumber Co., capital \$50,000, inceptd. (Lately incorrectly noted as "S. C., Charleston.")

W. Va., Wheeling.—Cecil Lumber Co. is reported to build planing mill.

### METAL-WORKING PLANTS

Ga., Savannah.—Corrugated-iron Culverts, etc.—Birmingham Metal Products Co., Birmingham, Ala., is reported to increase capacity of plant by 50 per cent.

### MINING

Ky., Marion.—Barytes.—Western Kentucky Barytes Co., capital \$200, inceptd. by A. H. Reed, H. L. Wilson, R. G. Terry and others.

Ky., Marion.—Iron.—West Kentucky Ore Co., capital \$12,000, inceptd. by A. H. Reed, H. L. Wilson, R. S. Terry and R. G. Terry.

Tenn., Lone Mountain-Zinc.—John Irwin is reported to develop zinc mines.

Tex., Gainesville—Gravel.—McDaniel Bros. will develop gravel mines; daily capacity, loading 100 cars gravel.

Va., Richmond—Granite.—Virginia Granite Corp., 906 Virginia Railway & Power Bldg. (lately noted) chartered, capital stock \$100,000; organized; Frank H. Hunter, Pres.; Maj. T. M. Russell, Middletown, Conn., V. P.; Wm. G. Kinney, Secy.-Treas.; develop granite quarry near Richmond; 43 acres; products to include building and monumental stone, paving blocks, curbing, flagging and crushed stone.

### MISCELLANEOUS CONSTRUCTION

Ark., Jonesboro—Heating Plant.—State Agricultural School will build central heating plant; Archt., Frank Blaisdell of Little Rock; work includes 2 boilers, pump, well, tank and tower, water main, steam pipe, generator and engine, stack and feed-water heater; open bids within 30 days; V. C. Kays, Engr. (See Machinery Wanted.)

Fla., Jacksonville—Municipal Terminals.—Board of Port Comms. progressing with construction municipal terminals heretofore detailed; \$1,500,000 available with further expenditure contemplated; began work October 4; Wade, Clower & Wade, Jacksonville, completed \$125,000 bulkhead about February 1 and used about 2000 tons steel sheet piling from Lackawanna (N. Y.) Steel Co.; Home Dredging Co., Mobile, Ala., began dredging Feb. 9 to reclaim 100 acres submerged land; probably 1,000,000 yds. dredging required; Board now constructing storage yard and connecting with railways; let contract Maryland Steel Co., Sparrows Point, Md., for 660 tons 70-lb. rail with splice bars; also contracted for drilling 8 in. well with guaranteed flow 1,500,000 gals. per 24 hrs.; bids opened Mch. 20 for constructing timber wharf around outer 600 ft. of 2 piers, Comms. to furnish creosoted piling, treated cypress piling and 800,000 yds. cypress timber; Home Dredging Co. has dredged exceeding 150,000 cu. yds. mud and sand and deposited same in the 2 piers. (Various heretofore noted; F. W. Bruce, Engr.)

La., New Orleans—Wharf.—City will construct pier and timber wharf on east bank Mississippi River between Soniat and Belle-castle Sts.; also pier timber approach to same; Port Comms., Suite 200, New Orleans Court Bldg., receives bids until Apr. 7; plans, etc., on file with Ford, Bacon & Davis, 921 Canal St., New Orleans. (See Machinery Wanted.)

N. C., Greensboro—Subway.—Southern Ry., W. H. Wells, Ch. Engr. Constr., Washington, D. C., completed plans for subway to be extension of Davis St. to Fayetteville St.; estimated cost \$109,000.

N. C., Old Fort—Lake.—Catawba Falls Ry. Co. is reported to construct dam at Catawba Falls (water plunge 730 ft.) sufficiently high to cover with water about 75 acres land, making lake 2550 ft. above sea level. (See Lumber Manufacturing.)

S. C., Spartanburg—Underpass.—Southern Ry., W. H. Wells, Ch. Engr., Constr., Washington, D. C., let contract Tufts & Lowe of Anderson, S. C., to construct concrete underpass, 110 ft. long; 35 ft.; electric lights; steam heat; ventilation.

W. Va., Benwood—Levee.—City contemplates petitioning Legislature to authorize \$20,000 bond issue for levee construction. Address The Mayor.

### MISCELLANEOUS ENTERPRISES

Ala., Mobile — Naval Stores.—Alabama Naval Stores Co., capital \$25,000, incptd.; W. P. Lewis, Pres., Cortelyou, Ala.; J. C. Price, V. P., Citronelle, Ala.; Benj. Vincent, Secy.-Treas., Mobile.

Ga., Griffin—Abattoir.—Johnson Packing Co. incptd. by David S. Johnson and others; plans to build abattoir, etc. (See Canning and Packing Plants.)

Ky., Louisville—Engraving.—Stationers' Engraving & Manufacturing Co., capital \$1000, incptd. by John Manly, A. S. Newhal and Fred Diefenbach.

La., New Orleans—Engineering.—Widmer Electrical Engineering & Construction Co., capital stock \$10,000, incptd.; Fred A. Earhart, Pres., 3109 Chippewa St.; Henry Widmer, V. P., 2019 Louisiana Ave.; Benj. J. Morath, Secy.-Treas., 814 3d St.

Md., Baltimore—Industrial Building.—Louis Miller has plans for Louis Levi, 1408 Munsey Bldg., Baltimore, for industrial building at 3 Fallway; 30x65 ft., 2 stories; concrete; slag roof; electric light; cost about \$10,000; bids being taken; due Mch. 22.

N. C., Asheville—Dry Cleaning.—J. C. Wilbar will erect addition to dry cleaning plant;

2 stories; brick; 2-story plate glass front; fireproof; cost \$4000; Contr., John L. Taylor of Asheville.

N. C., Williamston—Heating Plants.—S. R. Biggs Iron & Motor Co. plans to accept contracts for furnishing and installing steam-heating plants; ready to negotiate for purchasing boilers and supplies. (See Machinery Wanted.)

Okla., Kremlin—Elevator.—Farmers' Elevator Co., capital stock \$5000, incptd. by Chas. W. Hammond, Edward Leonard and Oscar Ekstrom.

Okla., Oklahoma City—Poultry.—Kiamichi Poultry Co. incptd. by J. T. Kelley, C. J. Davis and L. J. Pertree.

S. C., Charleston—Advertising.—Charleston Electrical Advertising Co., capital \$3000, incptd. by W. K. McDowell, M. A. Condon and Wm. LaPortes.

Tenn., Chattanooga—Abattoir.—Armour & Co. (main office Chicago, Ill.) are reported as contemplating erection of abattoir.

Tenn., Knoxville—Bottling.—Tripure Water Co., capital stock \$10,000, incptd. by T. H. Bush, M. E. Bush, J. R. Reese and others.

Tenn., Memphis—Laundry.—I. Samelson will erect building for laundry; 1 story; 30x100 ft.; front of glazed brick with terra-cotta trimmings; side walls of brick; basement 30x40 ft., with boiler and engine room in rear; cost \$12,000; A. G. Harrison will occupy structure and install laundry machinery costing about \$7000.

Tex., Crockett—Hardware.—Smith-Murchison Hardware Co., capital stock \$20,000, incorporated by S. L. Murchison, Sam Smith and Smith Murchison.

Tex., Mineral Wells—Mineral Water.—Mineral Wells Mineral Water Co., capital stock \$15,000, organized with Dr. E. A. Davis, Pres.; purchased mineral wells; build pavilion and bathhouse.

Va., Newport News—Plumbing.—C. A. Huffman Co., capital stock \$15,000, incptd.; C. A. Huffman, Pres.; W. B. Cottrell, Jr., Secy.-Treas.

Va., Norfolk—Plumbing.—Vandegrift & Co., capital stock \$6000, incptd.; J. A. Vandegrift, Pres.; M. A. Vandegrift, Secy.

Va., Richmond—Laundry.—Sanitary Laundry, capital stock \$20,000, incptd.; H. W. Burton, Pres.; Marion S. Branch, Secy.-Treas.

W. Va., Huntington—Plumbing.—Bockway Plumbing Co., capital \$5000, incptd. by F. W. Bockway, F. Braley, H. T. Lovett and others.

### MISCELLANEOUS FACTORIES

Fla., Perry — Bottling.—Perry Coca-Cola Bottling Works Co. is making improvements; cost about \$1000; let contract L. J. Wilson for addition to building and arranged for additional machinery

Ky., Louisville—Scouring Powder.—General Specialties Co., 218 Keller Bldg. (lately noted) incptd., capital stock \$5000; organized; David A. Keller, Pres.; J. T. Beard, V. P.; Geo. L. Weller, Secy.-Treas.; purchased machinery; manufacture scouring powder; capacity 5000 lbs. daily.

Ky., Mt. Sterling—Bottling.—Mt. Sterling Bottling Co., capital \$5000, incptd. by Thos. Kennedy, Virginia G. Gatewood and S. J. Gatewood.

Miss., Hattiesburg — Medicine.—Kanuck Remedy Co., capital stock \$10,000, incptd. by Thos. E. Cooper, Robt. M. Smith and Luther J. McDaniel.

Mo., St. Louis—Ice Cream Cones.—American Cone Co., capital stock \$50,000, incptd. by Ernest B. Hamwi, Paul Lehman, Frank B. Foster and others.

Mo., St. Louis—Paper Cans, etc.—Martha Investment Co. will erect factory building for Paper Can & Tube Co., manufacturer of paper cans, boxes and mailing tubes; structure will be about 200x100 ft. and cost (with switch connections) about \$55,000, exclusive of machinery; has about \$150,000 worth of machinery in present plant, which, with additional machinery, will be installed in new building; Godfrey & Co. have general contract.

Mo., St. Louis—Rim Locking Devices.—Hilko Rim Lock Co., capital stock \$25,000, incptd. by Maurice R. Kohn, Frank D. Hillier, Jr., Chas. L. Pyne and others.

Mo., St. Louis—Clothing.—Star Clothing Mfg. Co., Jas. Houchin, Pres., Jefferson City, Mo., leased building and will install office, salesroom and factory equipment; manufacture overalls and men's working clothing.

Okla., Marlow—Medicine.—Graham-Ziegenfuss Medicine Co., capital stock \$20,000, incorporated by E. R. Ziegenfuss, John B. Graham and B. L. Kirtley.

Okla., Oklahoma City—Cigars.—Metropolitan Cigar Co., capital stock \$10,000, incptd. by Seymour Ash, M. J. McLaughlin and Jas. T. Bowden.

Tenn., Memphis—Gloves.—B. G. Parker (address care of Empire Realty & Mortgage Co., 1017 Tennessee Trust Bldg.) contemplates establishment of plant to manufacture canvas gloves; asks prices on machinery and materials. (See Machinery Wanted.)

Va., Albemarle—Bottling.—Albemarle Bottling Works, capital stock \$10,000, incptd.; J. G. Brown, Pres.; E. S. Weaver, Secy.

Va., Charlottesville—Creamery, etc.—Charlottesville Ice Co. will build creamery milk depot and cold-storage plant; erect concrete and steel building; cost \$30,000; C. H. A. Wannanwetsch & Co., Buffalo, N. Y., Archt. and Constr. Engr.

Va., Martinsville—Mirrors.—Virginia Mirror Co. will enlarge plant; double present size.

Va., Portsmouth — Ice-Cream.—Chas. R. Welton and E. Thompson, Jr., let contract C. E. Dunnivant at \$2500 to erect factory building for Premier Ice-Cream Co.; structure will be 2 stories; 25x60 ft.; brick; gravel roof. (Lately noted.)

Va., Richmond—Hats.—Nu-Style Hat Co., capital stock \$1000, incptd.; S. L. Bloomberg, Pres.; J. Mitteldorfer, Secy.-Treas.

Va., Richmond — Disinfectants, etc.—Richmond Germicide Co., capital stock \$15,000, incptd.; Harry Houseman, Pres.; Ernest Eubank, Secy.-Treas.

Va., Richmond—Paint and Powder.—Nu-E-Ra Products Co., 403 E. Marshall St., capital stock \$15,000, incptd.; Wm. J. Putnam, Pres.; Louis Traferri, V. P.; J. M. Neely, Secy.-Treas.; has machinery; manufacture theatrical make-up grease paints, powders, etc.

Va., Staunton—Invalid Lifters.—Floyd Invalid Lifter Co., R. L. Floyd, Pres., will enlarge plant and install additional machinery.

Va., Winchester—Medicine.—Whitlock Herb Medicine Co. increased capital stock from \$5000 to \$60,000.

### MOTORS AND GARAGES

Ala., Bessemer—Garage.—Dr. J. C. Curry let contract Central Lumber Co., A. C. Kyzer, Pres., 5th and 21st Sts., Bessemer, to erect 45x90-ft. \$2000 garage on 19th St.; brick walls; tar and gravel roofing; plans by W. E. Bennis, Bessemer.

Ala., Birmingham—Automobile Line.—Birmingham Auto Transportation Co., capital stock \$2000, incptd.; W. H. Wyne, Pres.; W. I. Phillips, V. P.; J. T. Laury, Sec.; W. D. Fonville, Treas.

D. C., Washington—Garage.—E. M. Duin, 1270 New Hampshire Ave., will open bids Apr. 1 on 90x100-ft. fireproof building to cost \$25,000; plans for garage previously noted prepared by A. E. Landvoigt, 713 14th St.

Ga., Macon—Garage.—Napier Garage, capital stock \$2000, incptd. by Geo. R. Napier, Jas. W. Napier and Lee S. Worsham.

Ky., Louisville — Automobile Line.—Firestone Jitney Co. incptd. by Chas. F. Aufenkamp, Henrietta Speck and Mrs. E. D. Aufenkamp.

Ky., Paducah — Automobile Line.—Jitney Auto Co. incptd. by P. H. Cox, J. G. McMahon and R. L. Cox.

Md., Baltimore—Garage.—S. N. Allers has plans by J. C. Spedden, 1640 Hanover St., Baltimore, for garage at 6-8-10-12 N. West St.; 50x60 ft.; 2 stories; cost about \$3000; construction by owner.

Mo., St. Louis—Automobile Exchange.—St. Louis Auto Exchange, capital stock \$2000, incptd. by Aloysius Engelman, Angie Cohen and Wm. Martin.

Mo., St. Louis—Automobile Line.—St. Louis Auto & Transportation Co., capital stock \$2000, incptd. by Chas. F. Betz, Jacob Hagelstein and Richard Mederacke.

Va., Norfolk—Automobiles.—Motor Sales & Service Co., 719 Granby St. (lately noted) incptd., capital \$25,000, conducts sales and service station (Buick automobile); will install portable air compressor, lathe and drill press.

W. Va., Charlestown—Automobile Line.—Auto Bus Line Co., capital stock \$5000, incorporated by A. S. Allen, E. E. Cooke, W. F. Alexander and others.

W. Va., Wheeling—Garage.—W. W. Price of Price & Atkinson purchased site and is reported to build garage and apartment building.

### ROAD AND STREET WORK

Ala., Birmingham—City instructed, City Engr. Julian Kendrick to draw ordinance for grading, sidewalks, curbs and gutters on 30th St., Ensley; estimated cost \$5000.

Ala., Birmingham — City will pave 10th Ave. from 26th to 28th St. with asphaltic concrete; estimated cost \$8000; bids until Mch. 23; also pave 1st Ave. from end of Viaduct to 41st St.; estimated cost \$40,000; bids until Mch. 30 on asphalt, bitulithic, wood block and brick; Julian Kendrick, City Engr. (See Machinery Wanted.)

Ala., Hamilton.—Marion county will construct State-aid road leading from corporate limits of Guin, Ala., south to county line; \$4608.13 available; County Comms. receive bids until Apr. 13; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Rockford.—Coosa county will grade, drain and surface with top soil part of Rockford and Keleton Rd.; County Comms. receive bids until Apr. 19; expenditure, \$4616.26; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ark., Sheridan.—Comms. Grant County Road Improvement Dist. No. 1 sold \$100,000 bonds to construct 25 mi. of road across county from east to west; Wm. J. Parkes, Engr., Pine Bluff, made preliminary survey; J. L. West, County Judge.

Fla., Bradentown.—Manatee county defeated bond issue to construct hard roads. (Lately noted.)

Fla., Bradentown.—Manatee County Sarasota-Venice Road and Bridge Dist. voted \$250,000 bonds to construct bridge to Sarasota Key and 34 mi. sand-asphalt roads. Address E. C. Bruce, Sarasota, Fla. (Lately noted.)

Fla., Clearwater.—City let contract Pinellas Construction Co. (address, care of Mayor, Clearwater) for 21,000 yds. brick paving; cost \$45,000; J. N. Drew, City Engr. (Bids lately noted.)

Fla., DeLand.—Volusia county, Fourth Dist., contemplates voting on bond issue in about 6 weeks; J. D. Maley, Fourth Dist. Commr., Daytona, Fla. (Under New Securities proposed amount was lately noted as \$350,000.)

Fla., Fort Myers.—Lee county votes May 1 on about \$200,000 bonds to construct hard road from Fort Myers to Naples, 36½ mi., and graded road in continuation from Naples to Marco, 16½ mi.; total estimated cost of road construction is \$140,000 and \$37,500 additional for bridges, making total of \$177,500; plan to establish road district comprising 200,000 acres.

Fla., Hastings.—City let contract Wilson Construction Co. to grade, curb and pave streets with vitrified brick; about 5308.2 sq. yds.; R. M. Burt, Mayor. (Call for bids lately noted.)

Fla., Sanford.—City, M. W. Lovell, Clerk, lately noted to construct paving, is asking bids on bricks; bids to be opened Apr. 19; Fred T. Williams, City Engr. (See Machinery Wanted.)

Fla., Tavares.—Lake County Comms., J. H. Compton, Chrmn., plans for road construction lately noted (bids until April 15) involve about 200 mi. highways requiring following: 1,091,046 lin. ft. roadway; 329,630 cu. yds. excavation; 1,147,619 sq. yds. pavement; 301.62 cu. yds. concrete; 5136 lbs. reinforced concrete steel; 885 lin. ft. 12 to 24-in. terra-cotta drains; 1552 ft. pole line to be moved; 67 bridges to be raised. Bids on sand-clay; shell; modified asphalt; water-bound macadam; macadam with rocmac binder; oiled macadam. Determine material after bids are in. Expenditure about \$500,000. J. B. McCrary Co., Engr., Third National Bank Bldg., Atlanta, Ga. (See Machinery Wanted.)

Fla., Tarpon Springs.—City will grade, curb and pave portions of Grosse Ave., Cypress and Reed Sts. and Grand Blvd.; concrete or granite curbing; vitrified brick or sand asphalt; City Council receives bids until Mch. 26; J. S. Register, City Clerk. (See Machinery Wanted.)

Ga., Atlanta.—Public Works Com. of Fulton County Comms. plans to construct driveway connecting West End with Grant Park via Georgia Ave.; work to consist of regrading and repaving with bitulithic W. Georgia Ave. from S. Pryor to Grodon St. in West End; estimated cost \$100,000.

Ga., Lagrange.—City Council adopted specifications for street paving; Street Com. will let contract for 4 blocks. Address The Mayor.

Ky., Barbourville.—Knox county voted previously-noted \$200,000 bonds to construct about 65 mi. 9 to 14 ft. wide roads; plans not ready; Thos. Hubbard and C. B. Parrett, Engrs.



ave 10th asphaltic bids until end of \$40,000; (Lately noted.)

Ky., Hazard.—Perry county reported to build roads toward new coal-mining plants; county funds available. Perry County Judge, Hazard.

Ky., Maysville.—City, J. W. Lee, Mayor, will construct about 1½ mi. brick street paving; \$60,000 to \$70,000 available; date of opening bids not set, probably in May; Wm. Glasier, Engr. (Lately noted.)

Ky., Louisville.—Board of Public Works invites bids until Mch. 29 to oil about 1,000,000 sq. yds. macadam streets; \$38,900 appropriated.

Ky., Whitesburg.—Letcher County Comms. will expend \$25,000 on road and bridge construction between Whitesburg and Fleming. Henry T. Day, County Judge.

La., Jennings.—Jefferson Davis parish votes July 29 on \$400,000 bonds for gravel roads construction; L. E. Roberson, Welsh. La., Clerk, Police Jury. (Lately noted.)

Md., Baltimore.—Board of Awards let contracts to construct cement footways around various city buildings: Arundel Construction Co., 419 N. Carey St., work in Dists. Nos. 2, 3 and 4, calling for 12,000, 20,000 and 17,000 sq. ft., respectively; Howard L. Elder, Dist. No. 1, calling for 15,000 sq. ft. (Call for bids lately noted.)

Md., Baltimore.—City will grade, curb and pave with wood block and granite block on concrete base, contract 113, on German St. from Eutaw to South Sts.; bids until Mch. 31 by Board of Awards, John Hubert, Acting Pres.; R. Keith Compton, Chmn. and Consult. Engr. Paving Com. (See Machinery Wanted.)

Md., Baltimore.—Maryland State Roads Com., O. E. Weller, Chmn., 601 Garrett Bldg., asks bids until Apr. 13 on about 6.18 mi. road construction in Baltimore, Garrett and Cecil counties; contracts Nos. AB-8, BC-2A, O16-2B and CE-18. (See Machinery Wanted.)

Md., Baltimore.—State Roads Com., O. E. Weller, Chmn., 601 Garrett Bldg., let following contracts for 12.52 mi. paving, as follows: American Paving & Construction Co., Montebello Ave. and Jenkins La., Baltimore, at \$30,753.30 to pave Cathedral St. from Mt. Royal Ave. to Madison St., 47 mi., with asphalt; Thomas, Bennett & Hunter of Westminster, Md., at \$11,715.20, between Cumberland and Nave's Farm, Allegany county, 1.5 mi., resurfacing; Fisher & Carroza, 437 E. Preston St., Baltimore, at \$43,954.92, Annapolis Blvd. from Glen Burnie to Pumphrey, Anne Arundel county, 3.92 mi., concrete; Fogel & Co., at \$8476.96, through Grantsville, Garrett county, .85 mi., resurfacing; Thos. Mullin, 4001 Greenmont Ave., Baltimore, at \$22,854.54, La Plata to near Ripley, Charles county, 5.66 mi., gravel resurfacing; F. J. McGuire, at \$13,446.91, through Hancock, Washington county, 1 mi. (Call for bids lately noted.)

Md., Baltimore.—Public Service Com. will spread crude oil on State-improved roads; 475 mi., 1,278,300 gals. oil; let contracts to haul stone chips for oil process in various counties as follows: Clark-Hayward Co., 25 United States Fidelity & Guaranty Bldg., Baltimore, in 9 counties on Eastern Shore and Howard, Carroll and Allegany counties on Western Shore; Merchants' Transfer & Storage Co., 920-922 E. St. N. W., Washington, D. C., in Montgomery county; M. J. Grove Lime Co. of Limekiln, Md., in Frederick county; J. M. Mount of Damascus, Md., in Washington county; Geo. E. Geismann in Garrett county; stone chips to be hauled in Eastern Shore counties and in Montgomery, Howard and Carroll counties amount to 12,000 tons; in Frederick, Washington, Allegany and Garrett counties, 8000 tons; State truck is hauling stone chips on Washington-Annapolis Blvd. and for Harford and Baltimore counties, 10,000 tons; local material being secured for St. Mary's, Charles and Prince George's counties; total stone chips to be placed 33,000 tons. (Lately invited bids.)

Md., Cumberland.—City will pave Baltimore St. between Baltimore & Ohio and Western Maryland R. R. with kreolite blocks 3½ in. thick; 6-in. concrete foundation and bed of cement and sand 1 in. thick; width, 36 ft. between curbs and 10½ ft. on each side of car tracks; estimated cost \$23,000.

Md., Towson.—Baltimore county will improve Old Court Rd., 1 mi., macadam; Belvidere Ave., Park Heights to Reisterstown Rd., concrete or bituminous resurfacing; Roland Ave., Deepdene Rd. to Lake Ave. (lately noted), concrete roadway and curb; Eastern Ave., 5th to 16th St., sheet asphalt curb and gutter; County Comms. receive bids until Apr. 1; Chas. J. Fox, Chief Clerk. (See Machinery Wanted.)

Md., College Park, Lock Box 343.—Frederick, Md., will macadamize 3d St., Ext., College Parkway, North College Parkway, College Terrace and Upper College Terrace; bids invited. (See Machinery Wanted.)

Mo., Kansas City.—Park Board will grade extension of Van Brunt Blvd. from Independence Ave. to 27th St.; issued \$295,000 bonds.

N. C., Brevard.—Transylvania county, Brevard township, contemplates voting on bonds to construct roads. Address County Commissioners.

N. C., Bryson City.—Swain County Road Dist., T. M. Howerton, Engr., will construct about 26 mi. road; open bids Apr. 10; \$100,000 available; lately noted. (See Machinery Wanted.)

N. C., Lillington.—Harnett county, Black River township, will arrange to sell \$2500 bonds to construct roads. Address County Comms.

S. C., Anderson.—City, J. H. Godfrey, Mayor, voted lately-noted \$100,000 bonds, and \$225,000 is now available for construction of 200,000 sq. yds. street paving; bids to be asked; W. A. Sanders, Engr. (Lately noted.)

Tenn., Jackson.—City will pave Highland Ave. from College to Crescent Ave. and Royal St. from Nashville, Chattanooga & St. Louis Ry. to Hale St. with bitulithic.

Tenn., Knoxville.—Knox County Comms. introduced in Legislature \$500,000 bond issue to construct 110 to 130 mi. roads. (Noted in February.)

Tenn., Nashville.—City Com. is considering ordinances authorizing \$430,000 bond issue for street improvements; property owners to pay \$230,000 of bonds and city \$200,000. H. E. Howse, Mayor.

Tenn., Wartrace.—Wartrace Board of Trade adopted plans for completing road from Wartrace to Haley; also considering construction of boulevard connecting Wartrace with Bell Buckle, 4 mi.

Tex., Abilene.—City will pave about 18,300 sq. yds. roadway with gravel; City Comms. receive bids until Mch. 25; H. J. Bradshaw, City Engr. (See Machinery Wanted.)

Tex., Corsicana.—Navarro County Road Dist. No. 3 voted \$75,000 bonds to construct roads. Address County Comms.

Tex., Gittings.—City contract (lately noted) was for grading and graveling to amount of \$2500; issue of \$10,000 for further street construction contemplated; W. H. Cherry, City Comr.

Tex., Houston.—City let contract Horton & Horton of Houston to pave Cheverest St. from McKinney to Leeland Ave. with Uvalde rock asphalt; \$12,000 appropriated. Ben Campbell, Mayor. (Lately noted.)

Tex., Houston.—City let contract Horton & Horton of Houston to grade and pave approach to bridge on Capitol Ave. with vertical fiber brick; \$4400 appropriated; Ben Campbell, Mayor. (Call for bids lately noted.)

Tex., Houston.—City Council and Harris County Comms. invited bids until Apr. 12 to construct Main St. Blvd. from Belleaire Blvd. south toward city; material to include Standard brick, vertical fiber brick, sheet asphalt, etc.; 6-in. concrete base; E. E. Sands, City Engr., prepared plans; estimated cost \$334,560, including paving, drainage ditches, sewers and bridge at Harris Gulley; county appropriated \$100,000; city to pay balance; Ben Campbell, Mayor; lately noted. (See Machinery Wanted.)

Tex., Karnes City.—Karnes County, Precinct No. 1, will vote Mch. 22 on \$75,000 bonds, and Precinct No. 2, Mch. 24 on \$300,000 bonds for road construction, etc.; T. B. Smiley, County Judge, Karnes. (Lately noted.)

Tex., Longview.—Gregg county voted \$300,000 bonds to construct 75 to 100 mi. macadam roads. Address County Comms. (Lately roads. Address County Comms. J. H. McHoney, County Judge. (Lately noted.)

Tex., Livingston.—City voted to construct sidewalks. Address The Mayor.

Tex., Polytechnic.—City let contract E. H. Allen of Fort Worth to construct 15,000 ft. 3½-ft. cement sidewalks; will probably secure additional contract of about 10,000 ft.; W. H. Brown, City Secy.

Tex., Port Lavaca.—City votes Apr. 5 on \$19,500 bonds to grade and gravel streets, etc.; John B. Mahon, Mayor.

Va., Danville.—Street Com. let contract to McGuire Construction Co., Norfolk, Va., to pave Jefferson St. with asphalt concrete.

Va., Pulaski.—City let contract Hotel Construction Co., Pulaski, at \$103,069 to build about 7 mi. macadam and concrete streets; 21,000 sq. yds. concrete pavement; \$5,000 sq.

yds. macadam asphalt surface treatment; M. S. Hudgins, City Engr. (Call for bids lately noted.)

W. Va., Fairmont.—Fairmont State Normal School let contract Nick A. L. Nickolich to construct 1½ mi. of road at school.

W. Va., Charleston.—Kanawha county will grade and pave roads in Union, Charleston, Malden and Loudon Dists.; bids until Apr. 2; F. G. Burdett, County Road Engr., Charleston. (See Machinery Wanted.)

W. Va., Keyser.—Mineral county will construct road from Blaine to Elk Garden, in Elk Dist.; County Court receives bids until Apr. 6; J. V. Bell, Clerk. (See Machinery Wanted.)

## SEWER CONSTRUCTION

Ala., Birmingham.—City instructed City Engr. Julian Kendrick to draw ordinance to construct sanitary sewers vicinity of 43d St. and 10th and 11th Aves, East Birmingham; estimated cost \$5000.

Fla., Fort Myers.—City will construct 3011 ft. sanitary sewers, consisting of 725 ft. 12-in. pipe, 716 ft. 10-in. pipe and 1570 ft. 8-in. pipe; V branches, 5 manholes, 2 flush tanks, etc.; John W. Owens, City Clerk, receives bids until Apr. 1; J. A. Davison, City Engr. (See Machinery Wanted.)

Ga., Atlanta.—City will construct various sewers, including Highland Ave. Briar Cliff Rd. sanitary trunk sewer extension from St. Louis Ave., 8500 ft. north; White Provision Co. brick trunk sewer from 14th St. to Howell Mill Rd., etc.; W. E. Chambers, Purchasing Act., receives bids until Mch. 20. (See Machinery Wanted.)

Ga., Decatur.—City voted \$18,000 bonds to extend sewer system; F. T. Hopkins, Mayor. (Lately noted.)

Ga., Savannah.—City Council passed resolution instructing Ch. Engr. Conant to prepare plans, profiles, specifications and estimate of cost of completing drainage system; estimated to require bond issue of \$500,000, in addition to \$600,000 previously voted. (Reported in October to have let contracts aggregating \$527,417.)

Ky., Covington.—Dept. of Public Improvements contemplates constructing trunk sewer in Latonia Ave. to cost about \$25,000.

Md., Baltimore.—Board of Awards let contract H. C. Farren at \$96,000 to construct lateral sanitary sewers in Southwest Baltimore.

Md., Baltimore.—Board of Awards let contract Elkan-Tufts Construction Co., 702 E. Lexington St., at about \$70,000 to construct Gwynn's Run trunk drain, storm-water contract No. 42, section 1; about 1200 ft. 15x12-ft. and 150 ft. 18x12-ft. 6-in. drain; 665 ft. excavated outlet channels; 8300 cu. yds. earth and 700 cu. yds. rock excavation; 4750 cu. yds. concrete; 310 cu. yds. brick masonry; 250,000 lbs. reinforcing steel; Chas. England, Chmn. Sewerage Com., (Lately noted inviting bids.)

N. C., Clinton.—City, A. B. Crumpler, Mayor, will construct about 5½ mi. vitrified pipe sewers, 8 to 12-in. diam.; bids until Apr. 28; Wm. M. Platt, Engr., Durham, N. C. (See Machinery Wanted.)

N. C., Southport.—City will advertise bids within 3 weeks for material for lately-noted sewer construction; about 6 mi. sewers; \$40,000 bonds for sewer and water-works construction; J. B. McCrary Co., Engr., Atlanta, Ga.; H. P. O'Hagan, City Engr. (See Water-works.)

S. C., Manning.—City, A. C. Bradham, Mayor, is having plans and specifications made by Shand Engineering Co., Columbia, S. C., for lately-noted sewer and water-works construction; cost \$45,000; bids to be asked.

Va., Richmond.—City will construct section of Bacon Quarter branch sewer; reinforced concrete; about 1150 ft.; bids until Apr. 2; Chas. E. Bolling, City Engr. (See Machinery Wanted.)

W. Va., Dunbar.—Dunbar Land Co., Charleston, W. Va., will construct lately-noted sewers; cost about \$20,000; 24-in. main; 18 and 15-in. lateral, clay sewer pipe; construction probably by company, although bids will be considered.

W. Va., White Sulphur Springs.—City, W. A. Martin, Mayor, issued \$3500 bonds for sewer and water-works construction.

## TELEPHONE SYSTEMS

Ark., Pottsville.—Pottsville Telephone Co. inceptd.; J. A. Rackley, Pres.; J. P. Prior, Secy.

Fla., Key West.—Automatic Telephone Co., capital stock \$400,000, inceptd.; Dr. John B. Maloney, Pres.; W. D. Cash and T. A.

Lumley, V.-Ps.; Eugene W. Russell, Secy.; Chas. R. Pierce, Treas.; A. S. Metzner, Gen. Mgr. (Lately noted as securing municipal franchise for automatic telephone system.)

Ky., Cleaton.—Central Telegraph & Electric Co., capital \$4000, inceptd. by A. M. Creel, L. J. Mohon and W. M. Jack.

Ky., Catlettsburg.—Catlettsburg & Buchanan Telephone Co., (lately noted inceptd., capital \$1000) will construct 18 mi. telephone line by force account.

Ky., Rockdale.—Buckwood & Rockdale Telephone Co., capital \$1100, inceptd. by B. F. Wiley, D. B. Watson and W. B. Glass.

Ky., Somerset.—City, J. L. Waddle, Mayor, is prepared to grant 20-year franchise for continuance of telephone system. (See Machinery Wanted.)

Miss., Meridian.—Cumberland Telephone & Telegraph Co. (main office, Louisville, Ky.) let contract Dabbs & Wetmore, Meridian, at \$36,300 to erect exchange building; 2 stories; 80x61 ft.; brick; steam heat; heating, lighting, plumbing, etc., included; P. Thornton Marye, Archt., Atlanta, Ga. (Lately noted.)

Miss., Vicksburg.—Cumberland Telephone & Telegraph Co. (main office Louisville, Ky.) will build exchange; 2 stories and basement; brick and stone.

Okla., Hobart.—Elk View Telephone Co. inceptd. by Chas. G. St. Clair of Hobart, Thos. W. Green, Archibald Barnes and Kemper Hindon of Lone Wolf, Okla.

Tenn., Riceville.—Riceville Telephone Co. will build farmers' exchange to connect with Cumberland Telephone & Telegraph Co.'s line at Athens, Tenn.

Tex., Dallas.—Dallas Automatic Telephone Co. petitioned City Comms. for authority to increase capital stock \$500,000; plans to enlarge exchange and extend system.

Tex., Fredericksburg.—Willow City Telephone Co., capital stock \$7685, inceptd. by Alfred Sagebiel, R. S. Klett and Waldemar Hausen.

Va., Trevilians.—Green Springs Telephone Co., capital stock \$5000, inceptd.; A. G. Burnett, Pres.; F. C. Morris, Secy.

Va., Staunton.—Augusta County Farmers' Mutual Phone Co., Cyrus B. Cline, Pres., Mt. Solon, Va., will build exchange; concrete blocks; wood finishing; W. B. Johnson has contract for concrete work and L. N. B. Argenbright for woodwork. (Reported inceptd. in October with \$25,000 capital stock.)

W. Va., Keyser.—Mill Dale Telephone Co., capital \$5000, inceptd. by L. F. Adams, A. V. Park, S. P. Unstat and others.

## TEXTILE MILLS

Ala., Birmingham.—Cotton Goods.—Frank A. Dudley of Union Hotels Co., Niagara Falls, N. Y., and others are reported to build cotton mill costing \$500,000.

Ala., Phenix City.—Cotton Goods.—J. T. Bland Real Estate & Insurance Co. of Columbus, Ga., plans to organize \$150,000 company to build cotton mill.

Ga., Forsyth.—Cotton Yarn.—Ensign Cotton Mills will build mill addition and double spinning capacity; has 5000 ring spindles, 1400 twister spindles, electric power, etc.

Ga., Lagrange.—Cotton Specialties.—Hillside Cotton Mills let contract T. C. Thompson & Bros., Charlotte, N. C., and Birmingham, Ala., to construct 3-story main mill, 19 warehouses, engine-room, boiler-room and 122 3, 4, 5 and 6-room cottages; will install 20,000 spinning spindles, 4000 to 5000 twister spindles, 175 cards, etc.; let other contracts as follows: Cotton machinery, Saco-Lowell Shops, Lowell, Mass.; engine, McIntosh & Seymour Corp., Auburn, N. Y.; boilers, Lombard Iron Works & Supply Co., Augusta, Ga.; tank, R. D. Cole Mfg. Co., Newnan, Ga.; chimney, Alphons Custodia Chimney Construction Co., New York; Park A. Dallas Co., Atlanta, Ga., is Archt.-Engr. for Hillside company. (Organization with \$500,000 capital stock, etc., heretofore noted.)

Ga., Rome.—Bleachery.—Southern Bleachery Co., authorized capital stock \$25,000, inceptd. by J. F. Allison, A. S. David and R. L. Crutchfield, all of Calhoun, Ga.; build bleachery; clean cotton lint for manufacture of absorbents and explosives; use about 40,000 gals. water daily. (Mr. Allison and others lately noted to organize company to build bleachery.)

N. C., Burlington.—Hosiery.—Sellers Hosiery Mills will build 2-story 70x50-ft. addition and install finishing machinery.

N. C., Charlotte.—Cotton Batting.—Charlotte Cotton Fiber Co. will rebuild cotton-batting mill lately noted burned; let contract R. L. Goode, 30 W. 5th St., Charlotte, to erect main building and 2 warehouses;

mill construction; tar and gravel roof; sprinkler system; cost \$15,000.

N. C., Coats-Hosiery.—Coats Hosiery Mill, capital stock \$10,000, inctd. and organized; E. M. Henly, Prest.; J. T. Coats, V.-P.; N. T. Patterson, Secy.-Treas.; erect 70x24-ft. building costing \$800; install 41 knitting machines, 5 H. P. boiler for steaming hosiery, hand press for pressing hosiery, etc.; has not purchased boiler and press. (See Machinery Wanted.)

### WATER-POWER DEVELOPMENTS

N. C., Brevard.—Montrose Lumber Co. is reported as contemplating development of waterpower and transmission of electricity to nearby towns.

Va., Lexington.—Blue Ridge Power Co. is subsidiary to Virginia-Western Power Co., Clifton Forge, Va.; proposes construction hydro-electric plant at Balcony Falls on James River; probably soon announce details of plans; W. G. Mathews, Clifton Forge, is Prest. (Lately noted.)

### WATER-WORKS

Ala., Dadeville.—City, H. E. Berkstresser, Mayor, will vote Apr. 26 on \$14,000 bonds for water-works; pumping by city hydro-electric plant. Address The Mayor or J. B. Ryance, Atty. (Lately noted.)

Ark., Arkansas City.—Lambie & Demarke Light & Water Co. purchased water-works; will obtain franchise, install light plant and rebuild pumping plant; expend about \$50,000; asks prices on pumps, oil engines and electrical equipment; contemplate installing Diesel or semi-Diesel power plant with suitable pumps to take water from well of 9-ft. lift and deliver in 100-ft. tank. (See Machinery Wanted.)

Ark., Booneville.—City engaged Winters & Dove, Engrs., Fort Smith, to make preliminary survey and estimate cost of proposed water-works.

Ark., Fort Smith.—City, W. H. Bruce, Supt. of Water Plant, let contract Wallace Construction Co. for lately-noted water-works construction; cost about \$30,000; 6 and 8-in. pipe in new city addition.

Fla., Key West.—Water-Works Committee, J. R. Valdez, Chrmn., will lay new water mains to replace old pipe; estimated cost \$15,000.

Ga., Decatur.—City voted \$7000 bonds to improve water-works; F. T. Hopkins, Mayor. (Lately noted.)

Ga., Macon.—City will extend water mains into East Macon and Pleasant Hill Dist., costing \$3000; also install 10 fire hydrants. Address The Mayor.

Ky., Covington.—City will construct emergency main 3½ mi. long, 24 in. diam., from Ft. Thomas, along Three Mile Creek, including crossing of Licking River, 400 ft. wide; estimated cost \$200,000; Engrs., Geo. Hornung, Newport, Ky. (Lately noted.)

Ky., Paducah.—Paducah Water Co. has plans prepared for laying new water mains in business section; lay 16-in. mains on Washington St. from 2d St. to Broadway, 1st St. to Jefferson, etc.; estimated cost \$14,000.

La., Vivian.—City, J. D. Houston, Clerk, asks bids until Apr. 16 to construct water-works; \$35,000 bonds lately noted; Edw. W. Gantt Co., Engr., Dallas, Tex. (See Machinery Wanted.)

Md., East New Market.—City will construct water-works system, including about 1200 ft. 4 and 6 in. mains, 5 fire hydrants, concrete receiving basin, pumping station, tower and tank, etc.; bids by Board Town Commrs. until Apr. 15; Kastenhuber & Anderson, Engrs., Easton, Md. (See Machinery Wanted.)

Md., Hagerstown.—Washington County Water Co. petitioned Public Service Com. for authority to increase capital stock from \$320,000 to \$870,000; plans to build reservoir on South Mountain to have capacity of 400,000,000 gals. and cost \$320,000; also to install meters to cost \$10,000. (Lately noted.)

Mo., Clarence.—City votes Apr. 1 on \$27,000 bonds to construct water-works; Henrici, Kent & Lowry, Engrs., Reserve Bank Bldg., Kansas City.

Mo., Jefferson City.—Jefferson City Water Co. is having plans prepared by Chester & Fleming, Engrs., Pittsburgh, Pa., for rebuilding one of old settling basins (for water-works) which lately collapsed.

Mo., Kennett.—City voted \$7000 bonds to extend water-works; Clyde Oakes, Mayor. (Lately noted.)

N. C., Southport.—City will ask bids within 3 weeks on material for lately-noted water-works; about 5 mi. water system, with

pumping station, standpipe, reservoir, etc.; J. B. McCrary Co., Engr., Atlanta, Ga.; H. P. O'Hagan, City Engr.; \$40,000 bonds for sewer and water-works.

Okla., Chandler.—City votes Apr. 6 on \$5000 water-works bonds. Address The Mayor.

Okla., Checotah.—City votes Mch. 26 on \$30,000 bonds to improve water-works. Address The Mayor.

S. C., Manning.—City, A. C. Bradham, Mayor, is having plans and specifications made by Shand Engineering Co., Columbia, S. C., for water-works and sewer construction lately noted to cost \$45,000; bids to be asked.

Tenn., Maryville.—City, S. Everett, Mayor, voted lately-noted \$55,000 bonds for water-works; R. C. Huston & Co., Exchange Bldg., Memphis, Engrs.

Tenn., Spring City.—City is reported as considering bond issue to construct water-works. Address The Mayor.

Tenn., Trimble.—J. W. Dulin is reported to construct water-works.

Tex., Brenham.—City let all contracts in connection with water-works improvements—renewal of mains in business district, etc.; construction supervised by H. E. Booker, Supt. of Water-works. (Lately noted.)

Tex., Livingston.—City.—A. T. Feagin, Mayor, will install fire hose, reels and water meters; bids Apr. 7. (See Machinery Wanted.)

Va., Lynchburg.—City will build emergency pumping station and install booster pump; Council Committee on Water, Krise Bldg., receives bids until Apr. 6; bids as follows: Div. No. 1, two brick buildings; No. 2, three centrifugal pumps; No. 3, transformers, motors and other electrical equipment; No. 4, cast-iron pipe, valves, etc.; No. 5, liquid chlorine apparatus; H. L. Shaner, City Engr. (See Machinery Wanted.)

W. Va., Benwood.—City contemplates petitioning Legislature to authorize \$130,000 bond issue, of which \$100,000 is for water-plant purchase, \$20,000 for levee construction and \$10,000 for fire department. Address The Mayor.

W. Va., White Sulphur Springs.—City, W. A. Martin, Mayor, issued \$5000 bonds for water-works and sewer construction.

### WOODWORKING PLANTS

Ark., Batesville.—Handles.—B. J. Chambers of Greenville, Mo., is reported as contemplating establishment of handle mill.

Ark., Erin.—Vehicles, etc.—Fisher Vehicle, Woodstock & Lumber Co., capital \$5000, incorporated by A. B. Fisher, E. G. Fisher and C. N. Garand.

Ky., Paducah.—Cooperage.—West Kentucky Cooperage Co., capital stock \$12,000, inctd.; acquired plant of Wacker Cooperage Co.; Prest., H. C. Rhodes; V.-P., Jesse C. Gilbert; Secy.-Treas., W. E. Cochran.

Md., Cambridge.—Furniture.—Board of Trade is organizing company to build furniture factory to cost about \$50,000.

N. C., Andrews.—Flooring, etc.—Andrews Mfg. Co. completed 256-148-ft. main building; other construction to include following: Central power-house, brick construction, for boilers and electric generators; 120x80-ft. mill for daily capacity 30,000 ft. plain and quartered oak flooring; 126x44-ft. drykiln with capacity 200,000 ft. lumber; 120x80-ft. planing mill; 126x44-ft. drykiln for flooring; tannic-acid plant; power-plant exhaust steam will furnish heat for drykilns; waste (except chestnut) to furnish fuel for power plant; chestnut waste to be gathered by fans and blown ½ mi. to tannic-acid factory; remove Whiting mill to Andrews; cut 8000 acres hardwood and hemlock timber in Graham county. (Lately mentioned as Graham County Lumber Co.)

N. C., High Point.—Furniture.—Glant Furniture Co. will build addition to plant; 2 stories.

N. C., Hendersonville.—Buggies and Wagons.—Hendersonville Buggy & Wagon Co., capital \$25,000, inctd. by D. S. Pace, W. A. Rith and Geo. Sloan.

Va., Newport News.—Furniture, Showcases, etc.—Newport News Furniture & Pattern Mfg. Co., 33d St. and Jefferson Ave., will establish manufacturing plant; officers not yet elected; lately noted organized by Benj. F. King and others; asks prices on copper and nickel-plated moldings. (See Machinery Wanted.)

Va., Portsmouth.—Veneer.—D. H. Gowing Veneer Co. purchased 16.47 acres on which to build veneer factory.

Va., Portsmouth.—Veneer.—D. W. Gowing Veneer Co., D. H. Gowing, Prest., Burnsville, W. Va., purchased 16.47 acres land on which to build 2-story veneer factory.

### FIRE DAMAGE

Ala., Birmingham.—Beavers' Clubrooms, 1721½ 3d Ave.; E. D. Brown Furniture Co.'s store and Southwestern Specialty Co.'s store at 1721 and 1723 3 Ave.; loss on building, owned by Dr. T. F. Cheek of Cheek Real Estate Co., about \$7500.

Ala., Dadeville.—Public School; loss \$10,000. Address The Mayor.

Ala., Halsell.—A. R. Hardin's planing mill and drykiln plant; estimated loss, \$35,000.

Ala., New Market.—Emmet Rodgers' residence; loss about \$3500.

Ala., Piedmont.—J. M. Lusk's gin, 2 shingle mills, sawmill, farming machinery, etc., on Nance's Creek; estimated loss \$6000.

Ark., Harrisburg.—Two buildings owned by T. J. Collins, 305 Paul Bldg.; loss \$5000 to \$6000.

Ark., Jonesboro.—Roy Williams' residence, loss \$3000; John Luther's residence, loss \$3500.

Ark., Newport.—Mrs. J. H. Elfrank's residence; loss \$3000.

Fla., Jacksonville.—Jacksonville Charcoal Works, near 9th St. and Railroad Ave.

Fla., Jacksonville.—Hawkins Dye & French Cleaning Works on Main St. between 15th and 16th Sts.

Ga., Albany.—Beehive Building, owned by S. Reich.

Ga., Decatur.—W. J. Mitchell's 2 dwellings on Madison Ave., under construction.

Ga., Fitzgerald.—Farmers' Union gin; estimated loss \$4000.

Ga., Gainesville.—South Barracks at Riverside Military Academy; loss \$15,000.

Ga., Garfield.—Dwellings owned by J. A. Chapman and occupied by J. W. Burke and Dr. E. N. Brown.

Ga., Macon.—J. C. Godfree's store and dwelling at Pio Nono and Montpelier Aves.

Ga., Manchester.—Manchester Sanitarium, building owned by G. R. Christian.

Ga., Savannah.—Georgia-Carolina Lumber Co.'s drykilns, shifting tracks and lumber; estimated loss \$20,000.

Ky., Lebanon.—Cumberland Grocery Co.'s garage and warehouse; loss \$8000 to \$10,000.

Ky., Leburn.—Store, residence and warehouse of John and Sarah E. Bailey; loss \$8000.

Ky., Louisville.—Commercial Hotel, owned by Mr. Willis of Rumsey, Ky.

Ky., Middlesboro.—Joe Tamer's store, loss \$20,000; building occupied by Shelby Turner (loss \$5000) and Fred Tanner (loss \$3000); P. C. Breeding's building, loss \$7500.

La., Lake Charles.—Residence owned by Jacques Viterbo, Beaumont, Tex., and occupied by Dr. C. Gould House; loss about \$4000.

La., New Orleans.—Leon Israel & Bros. Coffee Co.'s store; building owned by Hugh McCloskey; loss \$8000.

La., Sodus.—Bush Drug Co.'s store; Post-office; loss \$15,000.

Md., Frederick.—A. C. McCordell's candy factory on N. Market St.; estimated loss \$50,000.

Md., Jessups.—W. L. Gardner & Sons' cannery and warehouse.

Mo., St. Louis.—August E. Martin's residence at Sappington and Big Bend Rds.; loss \$14,000.

Mo., St. Louis.—American Fixture & Showcase Mfg. Co.'s plant at 7th and Mullanphy Sts.; estimated loss on machinery and stock \$50,000 and on building \$25,000.

Mo., St. Louis.—Mallinckrodt Chemical Works' crystallizing plant at 2d and Mallinckrodt Sts.; estimated loss \$10,000.

N. C., Arden.—Mrs. S. Weston's residence

in Limestone township near Arden; loss about \$20,000.

N. C., Greenville.—Piedmont Hardwood Mfg. Co.'s plant; loss about \$3000; H. H. Hester, owner of building.

N. C., Jamestown.—Three buildings on hunting estate of George Gould, New York, including granary and stable; loss \$20,000.

N. C., Marshall.—J. J. Redmon's stable; J. P. Fisher's store; J. G. Ramsey's market; H. L. Bank's store and dwelling; Mrs. J. G. Ramsey's dwelling; total loss \$15,000.

N. C., Relford.—Hoke Oil & Fertilizer Co.'s cottonseed-oil mill; estimated loss \$20,000.

N. C., Raleigh.—B. S. Jerman's residence at Wilmington and North Sts.; loss several thousand dollars.

N. C., Statesville.—D. Henry F. Long's residence; loss several thousand dollars.

N. C., Mullins.—Mullins Lumber Co.'s plant; loss \$40,000.

S. C., Charleston.—Boyce's wharf, sheds, and warehouse, Whaley & Rives, custodians; total loss, \$50,000.

S. C., Sumter.—E. S. Haynesworth's residence; loss \$10,000.

Tenn., Knoxville.—Beaumont School, loss \$4500; M. W. Wilson, Supt. of Knox County Schools.

Tenn., Lenoir City.—Town Creek Milling Co.'s flour mill; loss \$40,000 to \$50,000.

Tenn., Shelbyville.—Tennessee Valley Power Co.'s electric-light and power plant; estimated loss \$15,000.

Tenn., Shelbyville.—Dr. Sam J. McGrew's residence on Railroad Ave.; loss \$20,000.

Tex., Bay City.—George Williams' residence; loss \$5000.

Tex., Celina.—A. T. Finley's residence; loss about \$9000.

Tex., Claude.—Clay Hardware Co.'s store; Martin Bros.' gin; loss about \$45,000.

Tex., Dallas.—W. W. Wason's residence at 2608 Live Oak St., occupied by B. F. Brown; loss \$14,000.

Tex., Gilmer.—M. B. Briggs' residence; loss about \$12,000.

Tex., Hemphill.—T. M. Anderson's residence, owned by F. L. King, Bronson, Tex.

Tex., Leonard.—Farmers' Union gin.

Tex., Mount Vernon.—Buildings occupied by Ennis-Tittle Co., S. N. Laws & Son, Laws Bros. and owned by H. W. and C. T. Tittle; total loss about \$65,000.

Tex., Pottsville.—A. G. Whitten's building, loss \$3500; W. W. Moore Drug Co.'s store, loss \$3200.

Tex., Waco.—Milkhouse, hay barn and silo owned by E. W. Marshall, J. H. Riley and J. D. Hobbs; loss \$10,000.

Tex., Wichita Falls.—C. A. Wittenbaugh's store; loss \$9000.

Tex., Wichita Falls.—D. M. Perkins' residence, loss \$4000; Mrs. J. O. McDowell's residence, loss \$4000; Mrs. S. T. Coffield's residence, loss \$4500.

Va., Amelia C. H.—R. D. Boynton's residence at Maplewood, near Amelia C. H.; loss about \$3500.

Va., Centralia.—Miss Julia Wheelwright's residence; loss \$20,000.

Va., Honaker.—J. H. Meade's store; Wygal Grocery Co.'s store; M. H. Burnett's store; Postoffice.

Va., Roanoke.—Building at 11-15 E. Salem Ave. owned by Goldberry & Mastiner and occupied by Hub Clothing Co. and others; building at 17 E. Salem Ave. owned by Alfred M. Fuller and occupied by Baltimore Bargain House; total loss about \$45,000.

W. Va., Benwood.—A. & O. Holderman's building at 2d and Water Sts.; loss \$8000 to \$10,000.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### APARTMENT-HOUSES

Fla., Ybor City, Ind. Sta., Tampa.—L'Unione Italiana has plans for store and apartments. (See Stores.)

Ga., Atlanta.—Bolling H. Jones is reported planning to erect apartment-house; 8 or 12 rooms; cost \$25,000 to \$30,000.

Ga., Atlanta.—Mrs. Porter King will erect apartment-house; cost \$40,000.

Ga., Atlanta.—Mackie Construction Co. is preparing plans for apartment-house at Piedmont Ave. and 14th St.; cost \$60,000.

Ga., Atlanta.—Warren C. Powell, Atlanta, is preparing plans for apartment-house on Washington St.; 3 stories; cost \$40,000.

Ga., Atlanta.—Kelly Land Co. will erect 2-story frame apartment-house on 16th St.; cost \$6,050.

Ga., Atlanta.—A. N. Canton, Atlanta, prepared plans for apartment-houses as follows: Two on Ponce de Leon Ave. between bridge and Highland Ave.; \$45,000 each; Juniper St., \$26,000; 13th St., \$50,000; Highland Ave., \$27,000; North Boulevard, \$23,000; Washington St., \$30,000; Bedford Pl., \$22,000 to \$25,000.



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Ga., Atlanta.—M. G. Phelan, executor, has plans by Hents & Reid, Candler Bldg., Atlanta, for apartment-house at Peachtree St. and Peachtree Pl.; 3 stories and basement; semi-mill construction; brick front; 4 suites to each floor; hot-water heat; tile roof; hardwood and pine floors; cost \$35,000.

Ky., Louisville.—J. W. Gaither will erect apartment-house at 3d St. and Ormsby Ave.; 2 stories.

Ky., Louisville.—Louis Keller & Son have plans by C. S. Keller, 121 W. A. St., Louisville, for apartment-house and will let contract about Apr. 1; 3 stories; 24 suites of 5 to 7 rooms; 125x200 ft.; concrete foundation; red brick; white tile trimmings; concrete floor construction; will require 40 tons steel, 700,000 bricks, 700 cu. yds. concrete, 300,000 ft. lumber; cost about \$100,000. (Lately noted.)

Mo., Carondelet, Station St. Louis.—F. J. Hall will erect 3 flats at 518-24-30 Eller St.; cost about \$15,000; each to contain 2 four and five-room suites; completion by June 15. (See Stores.)

Mo., St. Louis.—Richard G. Moiler will erect 2 structures for stores and apartments. (See Stores.)

Tex., Abilene.—Mrs. Anna D. Spain will soon let contract to erect apartment-house; cost about \$6000.

Tex., Dickinson.—Dr. C. B. Garnett has plans for store and apartment-house. (See Stores.)

Tex., El Paso.—W. H. Austin has plans by Gibson & Robertson, El Paso, for apartment-house at Virginia and Overland Sts.; 50 suites; pressed brick; 3 stories; roof garden; 4 wrought-iron balconies; court 25x30 ft.; total area 120x120 ft.; hardwood floors; tiled lobbies; soundproof walls; cost about \$50,000.

Tex., Houston.—E. G. Siadous has plans for store and apartment-house. (See Stores.)

Va., Norfolk.—F. O. Wood will erect apartment-house; brick; 3 stories; 6 suites; cost \$10,000.

Va., Richmond.—E. L. DeLaney and C. G. Morris will erect 2-story brick tenement-house on Addison St.; cost \$7500.

Va., Richmond.—W. F. Drinkard, Jr., will erect 2-story brick tenement-house on Floyd Ave.; 40 ft. 8 in. by 60 ft.; mill construction; tin roof; hot-water heating plant to cost \$900; city lights; cost \$7000 without mechanical equipment; R. T. Sunday, Archt., Richmond.

#### ASSOCIATION AND FRATERNAL

Md., Baltimore.—Y. W. C. A., Miss Isabelle H. Harman, Gen. Secy., Park Ave. and Franklin St., will erect building to replace present structure and adjoining building; 68x140 ft.; probably 6 or 7 stories; Jos. Evans Sperry, Archt., 409 Calvert Bldg., Baltimore. (Lately noted.)

Md., Salisbury.—I. O. O. F. plans to erect lodge building on Main St.; 3 stories and full basement; lower floor for store; second floor public hall, and third floor lodgerooms; cost \$15,000.

N. C., Goldsboro.—Directors of Knights of Gideon receive bids until Mch. 30 to erect building at Spruce and James Sts.; brick; 38x70 ft.; 2 stories; plans and specifications at office of J. W. Grimes, Chrmn., 109 Gladen St., Washington, N. C.

N. C., Rocky Mount.—Lodge No. 1038, B. P. O. E., is reported to erect building.

Okla., Cushing.—A. F. and A. M. are reported to erect pressed brick and stone building.

Okla., Muskogee.—A. F. and A. M. will erect building.

S. C., Columbia.—Richland Lodge, No. 39, A. F. and A. M., of Frank Hart, Secy. of Trustees, 130 Main St., will erect building at 125 Main St. to replace burned structure; 28x200 ft.; 6 stories; fireproof; roof garden; probably steam heat; electricity and gas from city plant; probably 3 elevators; lower floor for store, second and third floors, offices; upper floors, lodgerooms; cost \$100,000 without mechanical equipment, Mr. Hart may be addressed.

Tenn., Tellico Plains.—I. O. O. F. will rebuild burned hall; details not determined; J. R. Reynolds, Box 12, Tellico Plains, interested. (Lately noted burned.)

Tex., Dallas.—Labor Temple Building Assn. will erect building at Masten and Federal Sts.; 4 stories; cost \$40,000; plans ready in 2 or 3 weeks. (Lately noted.)

#### BANK AND OFFICE

Fla., West Palm Beach.—M. E. Gruber will erect 4 or 5-story office building.

Ga., Atlanta.—Bank of West End (H. T. Kilpatrick and others) will erect bank building at Lee and Gordon Sts.; 30x55 ft.

Ga., Atlanta.—Reuben Arnold and Harvey Hill indefinitely postponed erection of office building previously noted.

Ga., Macon.—Citizens' National Bank will not erect building, as previously reported.

S. C., Columbia.—Richland Lodge, No. 39, A. F. and A. M., will erect store, office and lodge building. (See Association and Fraternal.)

Ky., Louisville.—Louisville & Jefferson Bridge Co. is erecting office extension at cost of about \$5000.

Ky., Louisville.—Southern Methodist Board of Church Extension will soon let contract to erect building at 1115 S. 4th St.; fireproof; steel and concrete; 2 stories and basement; Ionic design; faced with Bedford or Bowling Green stone; air pressure heating system; electric elevator; marble and tile trimmings; cork floors; cost \$75,000. (Lately noted.)

Tex., Austin.—Geo. W. Littlefield is reported to erect 9-story office building, 60x24 ft.; also erect additional story to present structure and connect with new building. (Lately noted having plans prepared by C. H. Page & Bro., Austin, for 2 additional stories to present structure.)

Tex., Kirkland.—First State Bank will rebuild brick bank building lately burned.

Va., Richmond.—Bryan estate will erect building at 9th and Franklin Sts. for headquarters of Real Estate Exchange; 2 stories; brick; completion in 5 months; "L" shape; 38x131x27 ft.; basement on 9th St. side; C. W. Isbell, Archt., Richmond. (Lately noted.)

Va., Waynesboro.—Waynesboro National Bank will erect bank building on Main St.; construction to begin in June.

W. Va., Elkins.—Dr. G. B. Harvey will erect office building on Davis Ave.; also plans to erect residence.

#### CHURCHES

Ala., Phenix.—St. Patrick's Mission will erect priest house in rear of church building. Address The Pastor.

Ark., Glenwood.—Baptist church will erect building. Address The Pastor.

Fla., Miami.—Methodist Episcopal Church South is having plans prepared by John Gaisford, Memphis, Tenn., for building lately noted; 94x97 ft.; slate roof; contract to be let in about 6 weeks; cost \$35,000 without mechanical equipment. Address Rev. J. R. Cason, Pastor. (See Machinery Wanted.)

Fla., Sanford.—Presbyterian church has plans by C. F. Streeter, Jacksonville, Fla., for building at 3d St. and Oak Ave.; red vitrified brick; 50x100 ft.; auditorium to seat 600 people; additional room for Sunday-school; banquet hall to seat 150; cost \$25,000.

Fla., West Palm Beach.—Methodist Church has completed structure for which John Gaisford, Memphis, Tenn., was lately noted to have prepared plans.

Ga., Forsyth.—Ensign Cotton Mills will erect church.

Ky., Harrodsburg.—United Presbyterian church will expend \$15,000 to remodel building, provide additional Sunday-school rooms and chapel. Address The Pastor.

Ky., Paducah.—Broadway Methodist Church is having plans prepared by D. Harry Jansieon, Paducah, for building and will soon let contract.

Md., Baltimore.—M. E. Church South is having tentative plans prepared by Theo. Wells Pietsch, 1210 American Bldg., Baltimore, for church at Charles St. and University Parkway; white marble; cost about \$200,000. (Previously mentioned.)

N. C., Elizabeth City.—Blackwell Memorial Baptist Church will erect annex; cost about \$5000. Address The Pastor.

N. C., Winston-Salem.—Burkhead Methodist Church will erect 6 additional rooms to Sunday-school. Address The Pastor.

Okla., Pawhuska.—First Methodist Church, Rev. J. T. Riley, pastor, has plans by J. O. Parr, Oklahoma City, for building; 70x90 ft.; material to include face brick, art glass, slate roofing, etc.; cost \$12,000. (Lately noted.)

Tenn., Knoxville.—Brookside M. E. Church South will erect 10-room addition to building; 2 stories; domestic-science and manual-training departments, etc. Address The Pastor.

Va., Franklin.—Franklin Christian Church is having plans prepared by Wm. Newton Diehl, 46 Chamberlaine Bldg., Norfolk, Va., for building; 2 stories; 43 ft. 6 in. by 73 ft.; ordinary construction; pressed-brick front with stone trimmings; slate and gravel

roof; hot-air heating and ventilating system; electric lights; cost \$10,000 without mechanical equipment.

#### CITY AND COUNTY

Fla., Clearwater.—City Hall and Pavilion.—R. T. Daniel, Town Clerk, will erect addition to city hall; also pavilion at Water-works Park; bids opened Mch. 24.

Fla., Jacksonville.—Armory.—Duval County Comms. open bids Apr. 19 to erect lately-noted armory; 154x178 ft.; fireproof; gravel roof; steam heat; \$150,000 available; plans and specifications at office of Frank Brown, Clerk, and Talley & Summers Co., Archts., Jacksonville; separate bids for lighting and heating and plumbing. (See Machinery Wanted.)

Ga., Atlanta.—Warehouse and Stable.—City is considering erection of central warehouse and storage quarters for purchasing department; will also erect stable for Governor's Horse Guards; cost \$3000; details not definite; Ed R. Hays, Inspector of Buildings.

Miss., Jackson.—Fair.—City will vote on \$50,000 bonds for State Fair and \$65,000 to erect school. Address The Mayor.

Miss., Okolona.—Library.—City has plans by John Gaisford, Memphis, Tenn., for Carnegie library; brick and stone; cost \$7000; construction under supervision of architect. (Previously noted.)

Miss., Vicksburg.—Library.—City receives bids until Apr. 5 to erect Carnegie library; 2 stories; cost \$40,000. (Lately noted.)

Mo., Kansas City.—Library.—Board of Education will erect addition to Westport Library; cost \$15,000; construction to begin in 60 days. (Lately noted to erect addition to library at 9th and Locust Sts.)

Mo., St. Louis.—Market.—City will consider ordinance to issue \$150,000 bonds to construct market buildings. Address The Mayor.

Okla., Sapulpa.—Library.—City will erect \$20,000 Carnegie library. Address The Mayor.

Okla., Tulsa.—City Hall.—City accepted plans by J. B. Hawk, Tulsa, for remodeling building for city hall, fire department, truck-room, machine shop, etc.; 90x140 ft.

Tex., Galveston.—Jail.—Galveston county, John Murch, County Auditor, receives bids in duplicate until Mch. 29 for installing window guards and wire doors and making repairs in 3 rooms of county jail annex; plans and specifications at office of Mr. Murch.

Tex., Paris.—Jail.—Lamar County Comms. having plans prepared by C. G. Curtis, Paris, for jail. (Lately noted.)

Tex., Tyler.—Jail.—Smith county will erect jail (\$40,000) on S. Spring Ave. Address County Comms.

Va., Norfolk.—Library.—Directors of Norfolk Public Library have plans by Ferguson, Calrow & Taylor, Norfolk, for branch library on 15th St.; Georgian style; red brick; entrance pavilion; central delivery hall opening into 2 main reading-rooms; fireproof wing in rear containing administration offices, etc.; cost \$20,000. (Previously noted.)

#### COURTHOUSES

Okla., Okmulgee.—Okmulgee County Commissioners are having plans prepared by Hair & Co., Oklahoma City, for courthouse; cost \$100,000 to \$150,000. (Lately noted.)

#### DWELLINGS

Ala., Birmingham.—Robt. Stephens will erect 2-story brick veneer residence at 12th Ave. and 29th St.; cost \$7500.

Ala., Birmingham.—E. C. Bowman will erect 2-story brick-veneer residence at 3440 Fifteenth Ave. North; estimated cost \$7500.

Ala., Birmingham.—J. P. Walker will erect 2-story frame residence on 12th Ave.; cost \$5000.

Ala., Birmingham.—J. G. Whitfield will erect residence on South Highlands; cost \$25,000.

D. C., Washington.—Shannon & Lucha, 713 14th St. N. W., have plans by A. E. Landvoigt, 713 14th St. N. W., Washington, for 7 dwellings on N and O Sts. N. W.; 12x30 ft.; ordinary construction; tin roof; Latrobe stoves to cost \$300; gas lights; cement sidewalks; cost \$7000; also 4 dwellings on 14th St. Ter.; 30x36 ft.; mill construction; slate roof; hot-water heat; electric lights; cement sidewalks; cost \$24,000; construction by owners, who may be addressed.

D. C., Washington.—Harry Wardman, 1400 K St. N. W., will erect 8 six-room brick dwellings on Lincoln Ave.; cost \$3500 to \$4000 each; F. R. White, Archt., 1012 13th St. N. W., Washington.

Fla., Fort Myers.—John S. Makin, Philadelphia, and others are reported to have

purchased 11-acre site to erect two dwellings and make other improvements.

Fla., Miami.—Dr. E. H. Lyon is having plans prepared for residence.

Fla., St. Augustine.—Charles G. Mecklin is reported to erect residence on Orange St.

Fla., St. Petersburg.—C. J. Shea will erect residence.

Fla., St. Petersburg.—Dr. Henry C. Shurtleff is erecting 2 bungalows in Davista; cost about \$4000; will erect additional dwelling later.

Fla., St. Petersburg.—Joe Murphy will erect residence in Davista; also plans to erect several other residences.

Fla., St. Petersburg.—Mrs. Anna L. Box, Mgr. Alford Box Manufacturing Co., Philadelphia, Pa., is reported to erect residence.

Fla., Tampa.—E. H. Steinberg, 7th Ave., will erect \$5000 bungalow.

Ga., Atlanta.—W. T. Gentry will erect 2-story frame dwelling at 79 Columbia Ave.; cost \$5000; day labor.

Ga., Atlanta.—H. Karwisch will erect 6 one-story dwellings on S. Delta Pl.; cost \$5400; day labor.

Ga., Forsyth.—Ensign Cotton Mills will erect number of dwellings for operatives.

Ga., Tifton.—B. Y. Wallace will erect residence on College Ave.; cost \$5000 to \$6000.

Ky., Lexington.—Mrs. Emma T. Lilly will erect 10-room brick dwelling on Maxwell St.

Ky., Lexington.—Mrs. Elizabeth Lehman will erect residence at Bryan Ave. and Main St.

Ky., Lexington.—Wm. Archer will erect residence in Morningside.

Ky., Lexington.—Warfield Gratz will erect residence on Delmar Ave.; modified Spanish mission style.

Ky., Louisville.—J. H. Yenawine will erect brick-veneer dwelling at 430 E. Oak St.; cost \$4000.

Ky., Louisville.—T. M. Carr will erect brick veneer dwelling at 1468 S. 6th St.; cost \$3000.

Ky., Louisville.—Jacob Bartman will erect 2 brick-veneer dwellings at 1720-22 Tyler Parkway; cost \$4400.

La., Covington.—Sidney Burns has plans by T. L. and J. D. Young, New Orleans, La., for frame residence; cost \$5000.

Md., Baltimore.—Downing & Murphy, Rosehill Ter., will erect dwellings on York Rd. near Underwood Rd.; 21x35 ft.; brick; slate roof; hot-water heat; electric light; cost about \$70,000; J. F. Downing, 11 York Court, Guilford, Baltimore, Archt.; construction by owner.

Md., Baltimore.—Jno. E. Greiner has plans by Ellcott & Emmart, 1102 Union Trust Bldg., Baltimore, for dwelling at Guilford; 50x37 ft.; 3 stories; hollow-tile construction; slate roof; electric light; reported cost about \$35,000; bidders are Edw. Piliert, 15 E. Fayette St.; Cowan Building Co., 106 W. Madison St.; G. Walter Toveil, Eutaw and McCulloh Sts.; Willard E. Harn Co., 213 N. Calvert St.; Gladfelter & Chambers, 729 Roland Ave.; all of Baltimore; and Roland Park Co., Roland Pk., Md.; bids due Mch. 29. (Previously noted.)

Md., Baltimore.—Clitcy Realty Co., 2 E. Lexington St., has plans by S. Russell, 2300 Clifton Ave., Baltimore, for dwelling on College Ave. near Park Hill Ave.; brick; slag roof; steam heat; construction by owner.

Md., Baltimore County.—Mrs. Louise Page has plans by Howard Sill, 11 E. Pleasant St., Baltimore, for dwelling at Lochinvar; 1½ stories, 106x96 ft.; brick and concrete; slate roof; electric light; heating reserved; bidders are Willard E. Harn Co., 213 N. Calvert St.; Cowan Building Co., 106 W. Madison St.; Gladfelter & Chambers, 729 Roland Ave., all of Baltimore; and Israel Owings, Mt. Washington, Md.; bids due Mch. 26, 3 P. M.

Md., Eccleston.—Mrs. Wm. Manly has plans by Laurence Hall Fowler, 347 N. Charles St., Baltimore, for dwelling; 2½ stories, 45x71 ft., with wing 35x20 ft.; brick; slate roof; electric light; Cowan Bldg. Co., 106 W. Madison St., Baltimore, probable Contr. (Previously noted.)

Md., Ruxton.—R. Bennett Darnell, 1112 22 Fidelity Bldg., Baltimore, has plans by Stanislaus Russell, 2900 Clifton Ave., Baltimore, for dwelling on Locust Ave.; 1½ stories, 23x26 ft.; frame; slate roof; hot-water heat; electric light; cost about \$3000.

Md., Towson.—Wade Thomas is having plans prepared by Thos. Bond Owings, 347 N. Charles St., Baltimore, for dwelling at Cowpens; 2½ stories, 55x40 ft.; frame; slate roof; hot-water heat; electric light; cost about \$9000; plans ready about Apr. 1; among bidders will be Willard E. Harn,

213 N. Calvert St.; Cowan Bldg. Co., 106 W. Madison St.; Gladfelter & Chambers, 729 Roland Ave.; all of Baltimore.

Miss., Crawford, R. F. D. No. 1.—W. S. Turner will erect residence to replace structure lately noted damaged by fire; 7 or 8 rooms; steel shingle roof; fireplaces; acetylene lights.

Mo., Kansas City.—Harry A. Hershfield of Hershfield Jewelry Co. will erect residence on Benton Blvd.

Mo., Kansas City.—James S. Agee will erect 7 residences on Benton Blvd.

Mo., Kansas City.—E. C. Hallar will erect residence on W. 62d St. Ter.

Mo., Kansas City.—Zurn Building & Investment Co. will erect 17 dwellings on Agnes Ave.

Mo., St. Louis.—Wm. Schnaldt will erect residence on Kossuth Ave.

Mo., St. Louis.—Jackson Johnson is having plans prepared by Mauran, Russell & Crowell, Chemical Bldg., St. Louis, to rebuild burned dwelling; fireproof; use present exterior brick and stone walls.

Mo., St. Louis.—Geo. F. Bergfeld Investment & Construction Co. is reported to erect 8 residences on Ames Pl.; 2½ stories; diversified brick and stone; 8 and 10 rooms and sleeping porches; Tudor, Spanish, colonial and bungalow styles; garage for each dwelling; hardwood floors; hot-water heating plant; vacuum cleaning system; instantaneous water heaters.

N. C., Charlotte.—E. C. Marshall is having plans prepared by Hunter & Gordon, Charlotte, for Old English style residence.

N. C., Greensboro.—L. M. Ham and D. White will erect 2-story residence on Spring Garden St.; cost \$3400.

N. C., Hickory.—Geo. W. Hall is having plans prepared by Q. E. Herman, Hickory, for bungalow.

N. C., Hickory.—J. J. Willard will erect dwelling in Kenworth.

N. C., Hickory.—W. R. Icard, Granite Falls, N. C., will erect bungalow in West Hickory; 8 rooms; Q. E. Herman, Archt., Hickory.

N. C., Pinehurst.—Dr. J. S. Brown, Montclair, N. J., is reported to erect bungalow.

N. C., Pinehurst.—J. H. Andrews, Prest. of Quaker Oats Co., Akron, O., will erect residence.

N. C., Raleigh.—T. W. Johnson will erect residence; 2 stories; 6 rooms; furnace heat; cost \$3000.

N. C., Salisbury.—S. P. Foster will erect residence at 701 N. Fulton St.; 9 rooms; metal-shingle roof; hot blast heating system and grates; electric wiring and fixtures to cost \$60; sidewalks to cost \$60; cost \$3000 without mechanical equipment.

Okla., Laverne.—E. Tallman plans to erect residence.

Okla., Sayre.—Fred Livingston will erect residence; 9 rooms; furnace; T. E. Pope in charge of construction.

Okla., Tulsa.—L. C. Wells will erect three 1-story frame residences; cost \$4000.

Okla., Tulsa.—Ora M. Ellis will erect two-story frame residence at 1625 S. Denver St.; cost \$5000.

Okla., Tulsa.—H. F. Aby will expend \$3000 to remodel residence on S. Elwood St.

S. C., Charleston.—Caroline R. Ike will erect dwelling on Addison St.; cost \$4500.

S. C., Spartanburg.—M. W. Howard is reported to erect residence on S. Church St.

S. C., Greenwood.—Dr. E. J. Smith has plans by Talley & Summer, National Bank Bldg., Greenwood, for residence; 6 rooms; 1 story; English type; brick veneer; cost \$4000.

S. C., Greenwood.—J. Richard Williams has plans by Talley & Summer, National Bank Bldg., Greenwood, for bungalow; 1 story; 5 rooms; sleeping porch; frame; cost \$3000.

Tenn., Chattanooga.—C. T. Tomlinson has plans by Stewart & Johnson, Chattanooga, for residence; brick and stucco; 2 stories; 7 rooms; cost about \$4500.

Tenn., Memphis.—Mrs. R. Delpech will erect residence on South Parkway; cost about \$12,000.

Tenn., Memphis.—S. R. Martin will erect brick and stone residence at Madison Ave. and S. Evergreen St.; hardwood finish; hot-water heat; cost \$10,000.

Tenn., Nashville.—J. M. March has plans by Hart & Gardner, Nashville, for residence; 2 stories; brick; bids received until Mch. 26.

Tex., Amarillo.—Mrs. Ellen Denson will erect residence.

Tex., Austin.—J. C. Nagle will erect 2-

story-and-basement brick and frame residence; cost \$7000.

Tex., Austin.—J. Bright will erect 1-story dwelling on Ave. D, Hyde Park; cost \$6504.

Tex., Dallas.—J. W. Valdestino is having plans prepared by O. H. Thorman, El Paso, for \$12,000 residence in Manhattan Heights.

Tex., El Paso.—J. N. Vasquez will erect brick bungalow in East El Paso; cost \$3000.

Tex., Dallas.—E. H. Tonnison will erect 2-story 8-room frame residence at 3524 Cedar Springs; cost \$4000.

Tex., Dallas.—Jasper Collins will erect 2-story 8-room frame residence at 3810 Holland St.; cost \$3500.

Tex., Dallas.—W. C. Brackins will erect 5 and 8-room frame cottages at 918 S. Beckley Ave. and 311 N. Montclair St.; cost \$5250.

Tex., El Paso.—Geo. W. Sharp will erect 5 brick bungalows; cost \$12,450.

Tex., Freeport.—W. A. Nelson will erect two 2-story dwellings on W. 1st St.

Tex., Galveston.—David Fahey will erect several dwellings.

Tex., Galveston.—Adolph Dolson will erect residence; 2 stories.

Tex., Gatesville.—S. H. Burt has plans by H. D. Pampel, Temple, Tex., for residence; 2 stories; 7 rooms; frame; cost about \$4500.

Tex., Gatesville.—W. O. Guggolz will erect residence; 2 stories; 7 rooms; frame; cost \$3500; H. D. Pampel, Archt., Temple, Tex.

Tex., Hillsboro.—J. H. Berning will erect 6-room frame residence to cost about \$3000.

Tex., Houston.—Emerson F. Woodward will erect residence to cost about \$25,000.

Tex., Houston.—Houston Land Corporation will erect \$3000 residence on Kipling St.

Tex., San Antonio.—C. C. McRae will erect 2-story dwelling on Pruitt Ave.; cost \$3000.

Tex., San Antonio.—D. W. Gregory has plans by J. Clyde Williams, San Antonio, for residence at 426 10th St.; reinforced concrete foundation and porch floor; exterior walls Seco red brick in white mortar; metal tile roof.

Va., Franklin.—Jas. Chesley Beale will erect residence; 2 stories; frame; slate roof; hardwood trim; hot-air heat; parquet and tile floors; cost about \$5000; Wm. Newton Diehl, Archt., 46 Chamberlaine Bldg., Norfolk, Va.

Va., Norfolk.—L. McCloud will erect 2 brick and frame residences on Westover Ave.; cost \$4200.

Va., Norfolk.—N. Walsh will erect 2-story brick residence at 704 Boissevain Ave.; cost \$5000.

Va., Norfolk.—Sawyer Bros., Agts., will erect 2-story residence at 930 Graydon Ave.; cost \$4000.

Va., Norfolk.—John I. Clark has plans by Wickham C. Taylor, Norfolk, for residence at Boissevain and Orapax Ave.; 2 stories and basement; brick and stucco; 6 rooms and bath; garage in rear; bids opened Mch. 25.

Va., Richmond.—B. Hamilton will erect 2-story brick dwelling on Addison St.; cost \$4150.

Va., Richmond.—Walter L. Wills will erect 2 detached 2-story frame dwellings on Stuart Rd.; cost \$8000.

Va., Richmond.—R. L. Gordon will erect 2½-story brick residence in William Byrd Park Ter.; cost \$10,000.

Va., Richmond.—B. H. Melton will erect five 2-story brick dwellings in West End; cost \$20,150.

Va., Richmond.—O. J. Davis will erect 4 brick dwellings on Elm St. between Park and Stuart Aves.; cost \$11,000.

Va., Richmond.—W. P. Flanagan will erect 2-story brick dwelling on 4th Ave.; cost \$3600.

Va., West Point.—E. W. West will erect about 12 dwellings.

W. Va., Elkins.—Dr. G. B. Harvey plans to erect residence. (See Bank and Office.)

W. Va., Huntington.—G. T. Davis will erect 1½ and 2-story dwellings; brick; cost \$3700.

W. Va., Huntington.—J. R. Price will erect 2-story brick residence at 1706 Dalton Ave.; cost \$3000.

## GOVERNMENT AND STATE

Fla., Pensacola.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising Archt., Washington, D. C., receives bids until Apr. 29 for betterments in postoffice and courthouse; plans and specifications at office of custodian at Pensacola, and Mr. Wenderoth, as above.

Ga., Douglasville.—Postoffice.—J. R. Hutcherson will erect building for postoffice; 2 stories.

Ky., Louisville.—Courthouse and Postoffice. Treasury Dept., O. Wenderoth, Supervising Archt., Washington, D. C., receives bids until Apr. 17 for lookout galleries in U. S. courthouse and postoffice in accordance with drawings and specifications, copies of which are obtainable from custodian at Louisville or office of Supervising Archt.

N. C., Edenton.—Messhouse.—Bureau of Fisheries, Dept. of Commerce, Washington, D. C., receives bids until Apr. 19 (extended date) to construct messhouse at Edenton (N. C.) Fisheries Station; blank proposals, plans and specifications on application. (Lately noted.)

N. C., Wilmington.—Marine Hospital.—Treasury Dept., O. Wenderoth, Supervising Archt., Washington, D. C., receives bids until Apr. 19 to erect complete (including mechanical equipment) medical officers' quarters at U. S. Marine Hospital; 2 stories; frame; 930 sq. ft. ground area; drawings and specifications obtainable from custodian at Wilmington or at office of Supervising Archt.

Okla., Ardmore.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., receives bids until Apr. 28 to construct postoffice and courthouse, including mechanical equipment, lighting fixtures and approaches; 3 stories and basement; brick facing; 6000 sq. ft. ground area; fireproof construction; composition roof; plans and specifications at office of custodian of site and Mr. Wenderoth, as above.

Okla., Lawton.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., opened bids to erect postoffice building; Campbell Building Co. of Utah, Salt Lake City, Utah, is lowest bidder at \$120,500 for limestone construction, and M. Yeager & Son, Danville, Ill., is lowest bidder at \$125,335 for sandstone construction; 3 stories and basement; 6700 sq. ft. ground area; stone and brick facing; tin roof. (Previously noted.)

Va., Fort Monroe.—Stables, etc.—Quartermaster receives bids until Apr. 15 for material and constructing alterations of casement and addition to quartermaster stables, including plumbing and electric lighting; information on application.

## HOSPITALS, SANITARIUMS, ETC.

Ark., Fort Smith.—Dr. J. E. Ludeau will rebuild Fort Smith Hospital; cost \$20,000.

Mo., Kansas City.—German Hospital is having plans prepared by J. G. Braecklein, 315 Massachusetts Bldg., Kansas City, for addition and nurses' home; main addition to accommodate 125 patients; sun parlors on five top floors; private plants for heating, lighting, cold storage, water filtration and incinerating; 6 skylight operating-rooms on top floor; architect wires Manufacturers Record: "Structure will be 240x44 ft.; reinforced concrete, brick and terra-cotta; cost \$150,000."

Tenn., Nashville.—Asmus & Norton, architects, 505-08 Cole Bldg., Nashville, receive bids until Mch. 27 to erect building at Davidson County Tuberculosis Hospital for central heating plant, etc., on Buena Vista pike; work to be let as follows: Masons' work and concrete work, single contract; steam heating, single contract; all other branches, single contract. (Lately noted.)

Tex., Cleburne.—T. S. Jackson, Iowa City, Iowa, acquired site on Prairie Ave. and will erect sanitarium; 40x60 ft.; 3 stories; fireproof; cost \$10,000 to \$12,000; accommodations for 30 patients.

## HOTELS

Fla., Clermont.—J. M. Whitehead, Tampa, is preparing plans for hotel; 50 rooms; completion by Nov. 1; Scott-Davenport Co. will be manager.

Fla., St. Petersburg.—R. G. Grigg and others will erect apartment hotel at Davista; 50 rooms; private bath for each room, electric kitchenettes, etc.; glass-enclosed dining-room on roof; unit-type construction to permit additions; open fireplaces; bedrooms probably heated with electricity.

N. C., Old Fort.—Catawba Falls Ry. Co. is reported to erect hotel about 3½ mi. from Old Fort. (See Lumber Manufacturing.)

Tex., Fort Worth.—Seibold Hotel will expend \$5000 for improvements.

Tex., Burdette Wells (not a P. O.).—Burdette Wells Co., Hamp Cook, Prest., Houston, will expend about \$15,000 to enlarge hotel, improve grounds, etc.

Tex., San Angelo.—Roy Hudspeth, Sonora, Tex., plans to erect 3-story fireproof hotel.

W. Va., Berkeley Springs.—Berkeley Corporation is reported to have financed erec-

tion of hotel to cost \$100,000; main building 40x200 ft.; 4 stories; Hewitt & Granger, Archts., Bullitt Bldg., Philadelphia, Pa.

## MISCELLANEOUS

D. C., Washington.—Clubhouse.—Washington Chapter, American Institute of Architects, 1517 H St. N. W., has plans by Boal & Brown, 1725 H St. N. W., Washington, for clubhouse in Edgewood; cost \$10,000.

Md., Salisbury.—Hall.—I. O. O. F. plans to erect building for hall, etc. (See Association and Fraternal.)

N. C., Fayetteville.—Home.—Board of Directors receive bids through Jas. A. Bryan, Chrmn., or J. A. Turner, Secy., until Mch. 30 to erect Home for Women of the Confederacy; figures to include building complete with mechanical equipment, heating, plumbing, electric wiring and lighting, kitchen and laundry equipment; electric elevator, septic tanks, complete sewerage system; plans and specifications on application in writing to R. F. Smallwood, Newbern, N. C.; contractors to submit in addition to above, estimate on separate portions of buildings as indicated in plans. (Lately noted.)

Okla., Sapulpa.—Barn.—Smith Kiefer, Guardian of Le Roy Kiefer, will erect 1-story brick sales barn; 50x100 ft.; plans and specifications at office of McDougall & Lygle, Berryhill Bldg., Sapulpa.

Tex., Mineral Wells.—Pavilion and Bathhouses.—Mineral Wells Water Co., Dr. E. A. Davis, Prest., will erect drinking pavilion and bathhouse.

## RAILWAY STATIONS, SHEDS, ETC.

Mo., Kansas City.—Commercial Improvement Assn. applied for franchise to erect interurban station; is having preliminary sketches prepared by Wilder & Wight, Kansas City, for 6 or 8-story structure; cost about \$600,000.

S. C., Columbia.—Southern Ry. Co., W. H. Wells, Chief Engr. Constr., Washington, D. C., is reported to improve passenger depot.

Tex., Kerrville.—San Antonio & Arkansas Pass Ry., J. S. Peter, Gen. Mgr., San Antonio, Tex., will soon call for bids to erect brick depot.

## SCHOOLS

Ark., Batesville.—Batesville Special School Dist. sold \$15,000 bonds and will erect schools, including auditorium at high school and new structure in eastern section of city. Address Dist. School Trustees.

Fla., Auburndale.—Special School Dist. No. 6 sold \$15,000 bonds and will erect school; 6 rooms; brick; auditorium to seat 400; cost \$10,000; C. A. Parker, Supt. of Public Instruction of Polk County, Eartow, Fla.

Fla., Fort Meade.—Special Tax School Dist. No. 4 votes May 16 on \$15,000 bonds to erect school, make alterations, pay debt, etc.; C. A. Parker, Secy. Board of Public Instruction of Polk County, Bartow, Fla.

Fla., Seminole.—Seminole School Dist. is considering election on \$5000 bonds to erect school; Dixie M. Hollis, Supt. of Public Instruction, Pinellas County, Clearwater, Fla.

Fla., Tampa.—School Trustees accepted plans by Bonfoey & Elliott, Tampa, for school; cost \$40,000.

Fla., Zolfo.—Zolfo-Popash Subschool Dist. voted \$12,500 bonds for schools; J. O. Bickley, Supt. of Public Instruction, Arcadia, Fla. (Previously noted.)

Florida.—A. E. Lewis, 24 Real Estate Bldg., Miami, prepared plans for school building; concrete blocks; ordinary construction; composition roof; cost \$3000; bids opened Mch. 22. (See Machinery Wanted.)

Fla., Jacksonville.—Special School Tax Dist. voted \$1,000,000 bonds for school improvements detailed in February; F. A. Hathaway, Supt. of Public Instruction, Jacksonville.

Fla., Titusville.—Brevard County Commrs. have plans by A. E. Lewis, 24-26 Real Estate Bldg., Miami, Fla., for graded and high school; about 138x220 ft.; fireproof; heating not definitely decided; electric lights; Spanish tile and composition roof; cost \$65,000; plans ready Apr. 12; bids opened about May 15. Address Archt. (Previously noted.)

Fla., Mims.—Brevard County Commrs. have plans by A. E. Lewis, 24-26 Real Estate Bldg., Miami, Fla., for graded school; about 44x120 ft.; reinforced concrete walls; ordinary construction; composition roof; cost \$12,000 without mechanical equipment; plans ready about Apr. 12; bids opened about May 15. Address Archt. (Previously noted.)

Ga., Ellaville.—City is having plans prepared by Jas. J. Baldwin, Hubbard Bldg., Anderson, S. C., for school; 6 classrooms and



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auditorium; brick; tin roof; warm-air heat; cost \$10,000. (Lately noted.)

Ga., Decatur.—City voted \$25,000 bonds to erect school. Address The Mayor. (Lately noted.)

Ga., Gainesville.—Riverside Assn. will rebuild burned barracks of Riverside Military Academy; ordinary construction; composition roof; cost \$10,000; steam heat, \$1500; electric lighting, \$250; construction to begin at once. (Noted burned.)

Ga., Macon.—Catholic School, Madison St., will erect dormitory for teachers; 2 stories; brick; cost \$10,000.

La., Amite.—Fourth Ward voted tax to construct consolidated school building. Address Dist. School Trustees.

La., Bogalusa.—D. B. Showalter, Parish Supt., Alexandria, La., opens bids Apr. 6 to erect 2-story brick school; plans and specifications at office of C. Scott Yeager, Archt., Alexandria, La.

Md., Brandywine.—Board of School Commissioners of Prince George's county, Upper Marlboro, Md., is having plans prepared by Hunter & Bell, 411 Southern Bldg., Washington, D. C., for school; brick; slate or metal roof; cost \$7000 without mechanical equipment; specifications may be had from architects; W. W. Early, Brandywine, may be addressed. (Lately noted.)

Md., Frederick.—Greater Hood College has plans by Frederick B. Hamme, York, Pa., for converting old college building into auditorium, erection of east and west wings for residence of vice-president and art and music departments, respectively; construction to begin about Apr. 1; construction by owner.

Miss., Jackson.—City will vote on \$65,000 bonds to erect school in northern section of city. Address The Mayor.

Mo., Warrensburg.—Board of Regents will erect Normal school to replace burned structure; fireproof construction; steam-heating plant to cost \$25,000; cost \$250,000 without mechanical equipment; W. J. Hawkins is interested. (Lately noted.)

N. C., Angier.—Angier High School Dist. will vote in May on bonds to erect school. Address Dist. School Trustees.

N. C., Jamestown.—City votes Apr. 20 on \$15,000 bonds to erect high school to replace burned structure; brick; steam heat. Address The Mayor. (Lately noted.)

N. C., Lincolnton.—Lincolnton Graded School Trustees, Julius A. Suttle, Chrmn., is having plans prepared by Hook & Rogers, Charlotte, N. C., for school; 6 rooms; steam heat; voted \$10,000 bonds. (Lately noted.)

S. C., Charleston.—School Commrs. accepted plans by David B. Hyer, Charleston, to remodel Crafts School; will remodel 4 floors of present structure and erect 2-story wing; 3 stairways enclosed in brick walls; fire-escapes; 18 classrooms, 24x32 ft.; assembly-room on top floor of wing; auditorium 62x74 ft., with stage 11x23 ft.; seating capacity 500; rolling partition permits increasing same 6x74 ft. and capacity to 650 people; cost \$25,000. (Noted in January.)

S. C., Ellmore.—Dr. A. C. Baxter, Chrmn. Board of School Commrs., receives bids until Apr. 1 to erect high school; plans and specifications at office of Dr. Baxter, Ellmore, and Urquhart & Johnson, Archts., Palmetto Bldg., Columbia, S. C.

S. C., Johnsonville.—Johnsonville School Dist. voted \$15,000 bonds to erect school; Jos. McCutcheon and others, Trustees. (Lately noted.)

S. C., Yorkville.—Winthrop College, it is reported, will soon let contract to erect proposed gymnasium to cost \$45,000.

Tenn., Carthage.—Town, A. C. Read, Mayor, is having plans prepared by C. K. Colley, Nashville, to erect high-school building; about 110x56 ft.; ordinary brick construction; composition roof; cost \$10,000; hot-air heat, \$1000; construction to begin about May 1; address Archt. (Lately noted to vote Apr. 12 on \$15,000 bonds.)

Tenn., Chattanooga.—University of Chattanooga, W. Hooper, dean, is conferring with local architects upon plans for improvements to plant, including reconstruction of present main building, erection of 2 wings, etc.; cost \$50,000 to \$200,000.

Tenn., Chattanooga.—Bids received by Hamilton County Board of Education until Mch. 23 (extended date) to erect and install plumbing, lighting and heating for 3 brick schools; one at Clifton Hills and 2 at Soddy, Tenn.; plans for former by and on file at office of DeSable & Adams, Chattanooga; for latter, by C. E. Bearden and W. H. Sears, respectively, both of Chattanooga; W. S. Beck, Chrmn. (Lately noted.)

Tenn., McMinnville.—Building Com. is having plans prepared by Edward E. Dougherty, Nashville, Tenn., for school; cost about \$30,000. (Previously noted.)

Tenn., Nashville.—Vanderbilt University opens bids Apr. 13 to erect building for Medical School; 206x253 ft.; fireproof; composition roof; direct-indirect steam heat; conduit system of lighting; one ash lift and one freight elevator; cost \$350,000; Samuel Hannaford & Sons, Archts., Cincinnati. Address Chas. S. Brown, Engineering Bldg., Vanderbilt University, Nashville. (Lately noted.)

Tenn., Oakdale.—School Board plans to erect addition to school; 2 stories; also re-floor and overhaul present structure.

Tenn., Soddy.—Bids received by Hamilton County Board of Education, Chattanooga, Tenn., until March 23 (extended date) to erect 2 schools. (See Tenn., Chattanooga.)

Tex., Dallas.—Board of Education approved plans by Wm. B. Ittner, St. Louis, for South Dallas High School; 2 stories except central pavilion, which will be 3 stories; vitrified brick base; upper floors texture brick; 5 study-rooms, 4 lecture-rooms, 21 classrooms, 21 science-rooms; manual training and domestic science equipment; accommodations for 1200 students. (Previously noted.)

Tex., Dallas.—Maple Lawn School Dist. will erect school, for which bonds were lately noted voted; 6 classrooms, laboratory, auditorium, etc.; cost \$10,000; J. O. Parr, Archt., 1014-15 Southwestern Life Bldg., Dallas.

Tex., Haslet.—Common School Dist. No. 97 votes Apr. 6 on \$10,000 bonds to erect and equip school building. Jas. Hurgess, Haslet, may be addressed. (Lately noted.)

Tex., Sadler.—School Board will erect building for which bonds were voted; 6 rooms; brick; cost about \$10,000.

Tex., Sherman.—Carr-Burdette Carlton College will begin construction of administration building about Apr. 15; cost about \$50,000.

Tex., Sherman.—Jameson and Cleveland School Dist., consolidated and will vote Apr. 10 on \$3000 bonds to erect school. Address Dist. School Trustees.

Tex., Waco.—Baylor University has plans by Geo. Burnett, 212 Cameron Bldg., Waco, for athletic building; 100x48 ft.; ordinary construction; composition roof; steam heat; electric lights; cost \$10,000 without mechanical equipment; contract to be let in about 20 days. (Lately noted.)

W. Va., Fairmont.—State Board of Control, Jas. S. Lakin, Pres., Charleston, W. Va., opened bids to erect normal school; Rose & Beaman, Goldsboro, N. C., are lowest bidders at \$115,749; plans by Paul A. Davis, Archt., 1713 Sansom St., Philadelphia, Pa., call for 2-story-and-basement structure; 85x250 ft.; ordinary construction; slag roof; steam heat. (Lately noted.)

## STORES

Ala., Decatur.—Mrs. W. B. Edmundson is reported to erect three 2-story brick store buildings.

Ark., Little Rock.—S. R. Byarly will erect brick store at 709 W. 7th St.; cost \$3500.

Ark., McGehee.—E. Pilcher is reported to erect 2-story concrete building.

Ark., Star City.—J. G. Atkinson will erect store building on Jefferson St.; 40x120 ft.; mill construction; metal roof; cost \$4000; lighting plant \$350; plans and construction by owner. (Lately noted damaged by fire.)

Fla., West Palm Beach.—Palm Beach Mercantile Co. will erect 2 additional stories to building; install elevator.

Fla., Ybor City, Ind. Sta. Tampa.—L'Unione Italiana has plans by Curtis & Adams, Tampa, for store and apartments on 7th Ave.; 70x95 ft.; 2 stories; ordinary construction; tar and gravel roof; bids opened Mch. 20.

Ga., Macon.—J. C. Godfree will erect brick store building to replace structure noted damaged by fire.

Ky., Louisville.—Speed estate is reported to erect building on 3d St. between Walnut and Chestnut Sts.

Md., Salisbury.—I. O. O. F. plans to erect store, hall and lodge building. (See Association and Fraternal.)

Mo., Kansas City.—John P. Lynch will erect building; 1 story; 8 stores; footings, steel work, etc., to support 11 additional stories; Keene & Simpson, Archts., Kansas City.

Mo., St. Louis.—E. H. Ronsick will erect building on Margaretta Ave.

Mo., St. Louis.—Richard G. Moller will erect 2 buildings on Easton and Cora Aves.; one to contain 4 stores and 4 apartments; the other, 4 apartments; central heating plant in chamber below grade between 2 structures.

Mo., St. Louis.—Mrs. Minnie Voegtli is reported to erect building on Natural Bridge Ave.

N. C., Greenville.—Cobb & Edwards will erect 2 stores.

N. C., Greenville.—Taft & Vandyke will erect store building.

Okla., Hollis.—Fred Bell will erect brick business building; contract let about June 15 or July 1; 45x100 ft.; white face brick; metal ceiling; plate-glass front; concrete floor; tar and gravel roofing.

Okla., Tulsa.—Creel Grain Co. will erect business building; 2½ stories; brick; 25x140 ft.

Okla., Tulsa.—A. F. Ault will erect 2-story brick business building.

Okla., Wellston.—S. W. Bailey will erect brick business building 25x90 ft.

S. C., Saluda.—Smith Bros. will erect building to replace burned structure; 150x50 ft.; ordinary construction; steam heat; electric lighting; elevator. (Lately noted burned.)

S. C., Columbia.—Richland Lodge, No. 20, A. F. and A. M., will erect store, office and lodge building. (See Association and Fraternal.)

S. C., Gaffney.—A. S. and Victor Lipscomb will erect brick business building.

S. C., Gaffney.—T. H. Westrope will erect brick business building.

S. C., Spartanburg.—Mrs. Minnie Mitchell is reported to erect building at 130 Morgan Square.

Tenn., Nashville.—R. B. McClelland is having plans prepared by C. K. Colley, Nashville, for 2-story brick store on 4th Ave. near Commerce St.

Tex., Dickinson.—Dr. C. B. Garnett has plans by Glover & Son, Houston, for store and apartment building; 2 stories; brick; cost \$4000.

Tex., El Paso.—Richard Roberts and Wm. M. Banner are reported to erect business building; 112½x60 ft.; 5 or more stories.

Tex., Fort Worth.—North Fort Worth Townsite Co. will erect ten 1-story brick stores; approximate cost \$18,000.

Tex., Galveston.—Laura G. Brown will erect 2-story frame business building.

Tex., Houston.—March Culmore will expend \$4097 to repair building at 1511 San Jacinto St.

Tex., Houston.—E. G. Siadous has plans by Frederick Teich, Houston, for store and apartment-house at Crockett St. and Houston Ave.; 2 stories; brick; steam heat; 27x86 ft.; cost \$9000.

Tex., Roaring Springs.—C. J. Bell will

erect business building; 24x60 ft.; 2 stories; brick or frame.

W. Va., Huntington.—W. H. Willis & Co. will erect 2-story brick business building at 2008 Third Ave.; cost \$3800.

## THEATERS

Fla., Tampa.—Victor Grimmer and Henry J. Toussaint, Citizens' Bank Bldg., Tampa, are preparing plans for theater; 70x145 ft.; reinforced concrete construction; 2 stories and lobby on first floor; fireproof; terra-cotta front; marble wainscoting; metal fire-doors; fire curtain; stage 60x55 ft.; seating capacity 1200; tile floors in lobby; composition floor in theater proper; gas heating; copper marquee; cost \$50,000 to \$60,000. (Lately noted as Victor Grimmer and Edgar Fardon.)

Md., Baltimore.—Northern Amusement Co. incptd. with H. W. Webb of Webb & White, Title Bldg., Pres.; Wm. H. Martin, Secy.-Treas.; will erect moving picture theater at North Ave. near Charles St.; 45x115 ft.; fireproof; terra-cotta interior and exterior trimming; indirect lighting system; direct and indirect ventilating; pipe organ; seating capacity 1300 or more; leather upholstery; mezzanine, 50x30 ft.; cost approximately \$100,000; O. B. Wight, Archt., 1008 Mansey Bldg., Baltimore; bidders are Morrow Bros., Fidelity Bldg.; J. Henry Miller, Eutaw and Franklin Sts.; Singer-Pentz Co., Equitable Bldg.; Thos. B. Stanfield, 212 Clay St.; Wells Bros., Garrett Bldg.; John Waters, 23 Centre St.; B. F. Bennett Bldg. Co.; all of Baltimore; bids due Mch. 29. (Previously noted.)

Tex., Longview.—F. T. Rembert is having plans prepared by S. J. Blocker and John Carpenter to erect building for picture show and theater; 52.6x140 ft.; cost \$12,000 to \$15,000; contract not let; construction to begin Apr. 1 to 15. (Lately noted.)

Tex., Vernon.—R. L. Moore, Mgr. of Waggoner Ranch interests, is financing erection of opera-house; fireproof; seating capacity 1000; cost about \$15,000; completion by June 1.

## WAREHOUSES

Ky., Louisville.—Kilgore & Stilts will erect brick warehouse at 119 S. 1st St.; cost \$5000.

La., New Orleans.—Carrollton Feed Co. is having plans prepared by T. M. Thompson, New Orleans, for warehouse; galvanized-iron sides; composition roof.

N. C., Durham.—C. L. Haywood will erect tobacco warehouse on Rigsbee Ave. to cost several thousand dollars; will be leased to J. H. Hamlin and J. W. Moore.

Tex., Galveston.—Galveston Wharf Co. will proceed with erection of double-deck wharf sheds at Pier 41; steel and reinforced concrete; fireproof; each floor to have 260,000 sq. ft. storage space; will install handling machinery; cost about \$300,000; Ford, Bacon & Davis, Engrs., 921 Canal St., New Orleans, La. (Lately noted.)

## BUILDING CONTRACTS AWARDED

### APARTMENT-HOUSES

Ky., Glasgow.—Geo. R. Lewis let contract to erect store, office and apartment-house. (See Stores.)

Mo., St. Louis.—Wm. H. Beerman, 4003 N. 23d St., let contract to John H. Pueser, 206 Title Guaranty Bldg., St. Louis, to erect tenement-house at 257-57a Harris Ave.; 23 ft. 6 in. by 52 ft.; composition roof; furnace heat to cost \$200; cost \$5400 without mechanical equipment; Nolte & Nauman, architects, 610 Fullerton Bldg., St. Louis. (Lately noted.)

Tenn., Memphis.—James White let contract to J. R. Ellis, Memphis, to erect brick flat at 338 Washington Ave.; cost \$7000.

Tex., Abilene.—Mrs. Emma Jackson let contract to Jeff B. Fagan, Abilene, to erect apartment-house to replace lately-burned structure at 142 Orange St.; 20 rooms; 2 stories; cost \$6000. (Lately noted under Dwellings.)

### ASSOCIATION AND FRATERNAL

Fla., Mayo.—Masonic-Pythian Investment Co. let contract to O. B. Dees, Mayo, to erect lately-noted building on Main St.; 70x60 ft.; ordinary construction; composition roof; lower floor for stores and bank; upper floor, offices and lodge-rooms; cost \$7000 without mechanical equipment; Lamar C. Carter, Secy., may be addressed. (See Machinery Wanted.)

Fla., West Palm Beach.—W. I. Metcalf has plans by G. L. Pfeiffer, Miami, Fla., and let contract to Biscayne Construction Co.,

Miami, Fla., to erect building on Olive St.; 53x100 ft.; reinforced concrete; tile roof; electric lights; foundation under construction; cost \$20,000 without mechanical equipment; lower floor for postoffice; second floor for offices; upper floor for lodgerooms. (Lately noted.)

N. C., Wilmington.—Y. W. C. A., Mrs. M. L. Stover, Chrmn. Bldg. Com., let contract to Morton & Cox to erect gymnasium; 40x60 ft.; frame; Ne-Pon-Set roofing; cost \$2500 without mechanical equipment; steam heat, \$250; electric lighting; Jas. F. Gause, Jr., Archt., Wilmington. (Lately noted.)

### BANK AND OFFICE

Fla., Mayo.—Masonic-Pythian Investment Co. let contract to erect bank, office, store and lodge building. (See Association and Fraternal.)

Fla., Miami.—Southern Bank & Trust Co. let contract to remodel building, also erect addition 23x39 ft.; ceramic tile floor in corridor; 2 additional vaults; contract for bank fixtures of mahogany and bronze to cost \$15,000; let to G. W. Muller Bank Fixture Co., Atlanta; G. L. Pfeiffer, Archt., Miami.

Fla., Tampa.—J. H. Pratt let contract to erect laboratory and office building. (See Miscellaneous.)

Fla., West Palm Beach.—W. I. Metcalf let contract to erect building for offices, etc. (See Association and Fraternal.)

Ga., Atlanta.—Dr. W. B. Chandler will erect store and office building; contract let. (See Stores.)

Kf., Glasgow.—Geo. R. Lewis let contract to erect office, store and apartment building. (See Stores.)

Tenn., Chattanooga.—Stewart & Johnson, Chattanooga, have contract to remodel Milton Bldg. at Broad and 8th Sts.; rearrange interior, install marble bank fixtures, etc.; tile floor; will be occupied by Chickamauga Trust Co.

Tex., El Paso.—Gen. Anson Mills, Washington, D. C., let contract to Otto P. Kroeger, El Paso, to complete 4 upper stories of 12-story Mills Bldg.; reinforced concrete and tile; steam heat; Otis electric elevators; cost \$50,000 without mechanical equipment; Trost & Trost, Archts., El Paso. Address Contr.

Tex., Omaha.—State Bank of Omaha let contract to Fonzo Knight, Dalingfield, Tex., to erect building; 30x55 ft.; ordinary construction; metal roof; no heat or lighting plant; cost without mechanical equipment \$2000. (Lately noted burned.)

### CHURCHES

D. C., Washington.—Asbury A. M. E. Church let contract to W. A. Kimmel, Evans Bldg., Washington, to erect building at 11th and K Sts. N. W.; Gothic style; Port Deposit granite; auditorium to seat 1250; 3 balconies; circular bowl floor; cost \$65,000; bids opened Mch. 1; W. W. Cooke, Archt., Bowling Green, O. (Lately noted.)

Miss., Durant.—Methodist Episcopal Church South let contract to Havis-Virden Lumber Co., Jackson, Miss., to erect building at Madison St. and West Ave.; seating capacity 550; brick; asphalt or metal roof; steam heat to cost \$800 to \$1000; electric lights; cost \$12,000 without mechanical equipment; Alsop & Kuhnappell, Archts., West Point, Miss. Address E. Nash Broyles, Durant. (Lately noted.)

S. C., Columbia.—Shandon M. E. Church, R. Means Davis, Chmn. of Com., let contract to W. B. Sumersett, Columbia, to erect building at Preston and Maple Sts.; slate roof; low-pressure steam heat; cost \$6000 without mechanical equipment; George E. Lafaye, Archt., Columbia. (Lately noted.)

Tenn., Ripley.—J. A. Smith, Memphis, has general contract to erect church building, and E. F. Dowling, Memphis, has contract for plain and ornamental plastering for same.

Tex., Austin.—Swedish Lutheran Church let contract to Darby & Pierson, Austin, to erect parsonage; 2 stories; 8 rooms; 32x34 ft.; brick-vener; gas and electric fixtures; cost about \$4000; Edwin C. Kreisler, Archt., Austin.

Tex., Childress.—First Baptist Church let contract to M. T. Murray, Altus, Okla., to erect building; 62x73 ft.; ordinary construction; composition asphalt roof; steam heat; cost \$12,000; J. O. Parr, Archt., Security Bldg., Oklahoma City. (Lately noted.)

### CITY AND COUNTY

N. C., Halifax.—Jail and Jailer's Residence. Halifax County Commrs. let contract to Rose & Beaman, Goldsboro, N. C., to erect jail and jailer's residence; fireproof; Barrett specification roof; low pressure steam heat; cell work let to Van Dorn Iron Works Co., Cleveland, O.; plans by Mr. Harvey, Littleton, N. C., and Frank B. Simpson, Raleigh, N. C. (Lately noted.)

Tex., Orange.—Jail.—Orange County Commissioners let contract to Pauly Jail Building Co., St. Louis, to install steel cages on first floor of county jail.

### COURTHOUSES

Ga., Lincolnton.—Lincoln county, Saml. L. Wilkes, Ordinary, let contract to Little-Clecker Constr. Co., Anniston, Ala., to erect courthouse lately noted; ordinary construction; some portions fireproof; tin roof; 2 stories; brick and frame; cost \$24,231 without mechanical equipment; plans by G. Lloyd Preacher, Chronicle Bldg., Augusta, Ga.; architect may be addressed. (See Machinery Wanted.)

### DWELLINGS

Ala., Birmingham.—Birmingham Realty Co. let contract to C. W. Brown, Birmingham, to erect residence at 32d St. and 15th Ave. N.; 1 story; frame; cost \$2500.

Ala., Birmingham.—J. P. Walker let contract to O'Rear & Penn, Birmingham, to erect 2-story frame dwelling on 12th Ave. S. between 41st and 42d Sts.; estimated cost \$6000.

Ark., Little Rock.—Jean Reutlinger, 2005 Spring St., let contract to Hinson-Bosshart Co., Little Rock, to erect 3 dwellings on 20th and Spring Sts.

D. C., Washington.—John S. Flannery let contract to Richardson & Burgess, 1413 H St. N. W., Washington, to erect residence at 2411 California St. N. W.; ordinary construction; slate roof; hot-water heat; electric lighting; cost \$20,000; Marsh & Peters, Archts., 530 13th St. N. W., Washington; subcontracts let. (Lately noted.)

D. C., Washington.—Francis G. Caudl let contract to J. J. Moebis, 817 G St. N. W., Washington, to erect 4-story dwelling at 1215 10th St. N. W.; cost \$17,000; Claughton West, Archt., Corcoran Bldg., Washington.

D. C., Washington.—Leonard Brown has plans by A. E. Landvoigt, 713 14th St. N. W., Washington, for 3 dwellings at 30th and O Sts.; 20x40 ft.; ordinary construction; tin roof; hot-water heat; electric lights; cement sidewalks; cost \$10,000; Shannon & Luchs, Contrs., 713 14th St. N. W., Washington; construction begins Apr. 15. Address contractors.

Fla., Seabreeze.—C. J. Rouser, Lansing, Mich., let contract to S. H. Gove, Daytona, Fla., to erect residence; about 30x40 ft.; flat tile roof; cost \$5000. (Lately noted.)

Fla., Miami.—Dale Miller Realty Co. let contract to erect 66 three, four and five-room dwellings on Dale Miller tract; mill construction; shingle roof; cost \$400 to \$500 each. (Lately noted.)

Fla., St. Petersburg.—F. H. Harriman, Boston, Mass., is reported to have let contract to erect California type bungalow.

Ga., Atlanta.—Georgian Company let contract to Macule Construction Co., Atlanta, to erect 1-story frame dwelling on Golf Circle; cost \$4500.

Ga., Atlanta.—Elliott Dunn, 817 S. 12th St., Birmingham, Ala., let contract to Jas. Norris, 92 Orange St., Atlanta, to erect eight 6-room residences on Miller Ave.; ordinary construction; shingle roof; fireplaces; gas lighting; cost \$8000 without mechanical equipment; H. E. Gallup, Archt., Birmingham. (Lately noted.)

Ga., Atlanta.—A. H. Walden let contract to McDaniel & Calmes, Atlanta, to erect 2-story brick-vener dwelling on Myrtle St.; cost \$8000.

Ga., Lagrange.—Hillside Cotton Mills let contract to T. C. Thompson & Bro., Charlotte, N. C., and Birmingham, Ala., to erect 122 cottages of 3, 4, 5 and 6 rooms. (See Warehouses.)

Ga., LaGrange.—Hillside Cotton Mills let contract to erect 125 four-room tenement-houses. (See Warehouses.)

La., New Orleans.—Earl Mertzweiler let contract to Jos. M. DeFaites, New Orleans, to erect 2 frame dwellings; cost \$3710.

Md., Baltimore.—Robt. F. Roberts, 2000 Mt. Royal Ter., has plans by Bailey & Bassett, Philadelphia, Pa., and let contract to E. G. Turner, 15 E. Fayette St., Baltimore, to erect dwelling on Charles St. Ave., Guilford; 2½ stories; 30x75 ft.; brick; slate roof; hot-water and hot-air heat; gas and electric light; also garage; 2 stories; about 20x20 ft.; brick; cost of both about \$30,000. (Lately noted.)

Md., Baltimore.—Jos. and Fannie Sopher have plans by John C. Spedden, 1640 Hanover St., and let contract to Nathan Ziegler, 1515 E. Pratt St., both of Baltimore, to erect store and dwelling at 606 E. Baltimore St.; 3 stories; 19x65 ft.; brick; tin roof; hot-water heat; cost \$5000.

Miss., Meridian.—John Kamper will erect 12 or more bungalows on 16th St. near 37th Ave.; cost \$25,000 to \$30,000; O. P. Pool, Contr., Meridian.

N. C., Greensboro.—J. R. Cutchin, 403 W. Washington St., let contract to J. W. E. Lewis to erect residence on lot adjoining present dwelling; 8 rooms; brick; slate roof; electric lighting; cost \$3500; steam heat, \$350.

Okla., Wilburton.—C. Carignano let contract to D. Beard to erect 2 dwellings.

S. C., Greenwood.—Dr. G. W. Connor let contract to Mauldin & Chapman, Greenwood, to erect residence; cost \$2500; J. E. Summer, Archt., National Bank Bldg., Greenwood. (Previously noted.)

S. C., Spartanburg.—Lionel D. Lawson has plans by and let contract to J. C. West, Spartanburg, to erect dwelling; 8 rooms and 2 baths; metal shingle roof; cost \$2500. (Lately noted.)

Tenn., McKenzie.—B. A. Dinwiddie has plans by and let contract to Jas. Seals, McKenzie, to erect bungalow; 30x45 ft.; mill construction; shingle roof; grates; electric lighting; concrete sidewalks; address owner. (Lately noted.)

Tenn., Memphis.—Chas. J. Corbett let contract to John A. Merriman, Memphis, to erect 1-story stone and stucco bungalow;

cost \$3500; Regan & Weller, Archts., Memphis. (Lately noted.)

Tenn., Memphis.—Mrs. L. R. Johnson has plans by Regan & Weller, 834 Bank of Commerce & Trust Bldg., Memphis, and let contract to Foster & France, same address, to erect dwelling; 2 stories; stone veneer; 33x52 ft.; slate roof; hot-water heat; electric wiring and fixtures; stone trimmings; concrete sidewalks and foundation; oak floors and tile in bath. (Lately noted.)

Tenn., Murfreesboro.—R. W. Hale let contract to E. G. Holladay Co., 44 Noel Block, Nashville, to erect residence; 2 stories and attic and basement; composition shingle roof; steam heat; cost \$25,000; Hart & Gardner, Archts., Nashville. (Lately noted.)

Tex., Abilene.—W. A. Ward and Mrs. Horton have plans by and let contract to H. H. Haywood, Abilene, to erect residences at Clinton and Kirkwood Aves.; 32x38 ft., 30x34 ft. and 30x34 ft.; mill construction; cedar shingle roofs; gas heat; electric lights; cost \$3300 without mechanical equipment; sidewalks to cost about \$100. (Lately noted.)

Tex., Abilene.—Mrs. Helena Horton let contract to H. H. Haywood to erect 2 bungalows at 3d and Elm Sts.

Tex., Denton.—J. W. Simmons let contract to Mr. McLeon, Mineola, Tex., to erect residence in Carroll Park; cost \$7500.

Tex., El Paso.—Miss Anabel Wilson has plans by S. E. Patton, 3530 Douglass St., El Paso, and let contract to J. W. Jackson, El Paso, to erect residence; 2 stories; materials (to be purchased by contractor) will include pressed brick, millwork, composition roof, plate glass, electric fixtures, hot-water heating plant, etc.; cost \$9000.

Tex., Mineral Wells.—L. E. Seaman let contract to Murphy & Croft, Mineral Wells, to erect residence; 2 stories; brick; hollow tile and brick; metal lath; plumbing; steam heating; electrical fixtures; contractor will purchase materials; cost about 12,000; C. H. Leinbach, Archt., 1105 Southwestern Life Bldg., Dallas. (Lately noted.)

Tex., San Antonio.—E. A. Leighton let contract to W. W. Brown, San Antonio, to erect residence at 1503 Ave. D.; 10 rooms; frame; tin roof; cost \$3500 to \$4000; Fred Gaenslen, Archt., San Antonio. (Lately noted.)

Tex., Texarkana.—Chas. P. Temple will erect residence; 2 stories; Bryant & Brown, Contrs., Texarkana.

Va., City Point.—E. I. Du Pont de Nemours Powder Co., Wilmington, Del., let contract to C. W. Hancock & Sons, Lynchburg, Va., to erect 60 operatives' dwellings in addition to 61 completed; varying dimensions; ordinary construction; wood shingle roof; no heating; cost \$50,000; subcontracts not yet awarded; address contractors. (Lately noted.)

Va., Richmond.—C. B. Lathrop, 16th and Marshall Sts., let contract to Geo. D. Priddy, 1501 W. Marshall St., Richmond, to erect dwelling at 1514 Park Ave.; 36x53 ft.; brick; tile roof; cost \$11,840; Asbury & Whitehurst, Archts., 7th and Franklin Sts., Richmond. (Lately noted.)

### GOVERNMENT AND STATE

Fla., West Palm Beach.—Postoffice.—W. I. Metcalf let contract to erect building for postoffice, etc. (See Association and Fraternal.)

La., New Orleans.—Naval Station.—Bureau of Yards and Docks let contract to C. O. Eure, Hattiesburg, Miss., to repair buildings for marines at naval station; also let contract at about \$12,000 to Carnes Plumbing Co., Laurel, Miss., for plumbing at about \$2500 for painting; cost, without mechanical equipment, \$30,000. (Lately noted.)

### HOSPITALS, SANITARIUMS, ETC.

S. C., Walterboro.—Dr. Chas. H. Els Dorn has plans by and let contract to W. E. Fraser to erect hospital building; ordinary construction; metal roof; hot-air heat; electric lighting; elevators not decided; cost \$6000. Address Dr. Els Dorn.

### HOTELS

Tex., Galveston.—John W. Groce let contract to erect resort hotel at Virginia Point; private water and electric plants.

Tex., Stephenville.—Ernie Hall let contract to erect hotel; 25 rooms; white brick; cost \$6500.

### MISCELLANEOUS

Fla., Tampa.—Laboratory.—J. H. Pratt let contract to G. A. Miller, Tampa, to erect laboratory and office building at 705 Twigg St.; 52½x80 ft.; 2 stories; ordinary brick

and steel construction; gravel roof; also let contract for plumbing to W. E. McAndrew, Tampa, and for electrical work to P. F. Lyons, Tampa; cost \$13,000 without mechanical equipment; F. J. Kennard, Archt., Tampa. (Lately noted.)

La., New Orleans.—Stables.—Monteleone Laundry Stables has plans by Toledano, Wogan & Bernard, New Orleans, and let contract to Geo. J. Glover, New Orleans, to erect stables.

Tex., Fort Worth.—Undertaking.—Fort Worth Undertaking Co. let contract to Van Horn-Shaw Construction Co., 1010 American Natl. Bank Bldg., Fort Worth, to erect building for undertaking establishment; 60x100 ft.; 2 stories and basement; mill construction; tar and gravel or composition built-up roof; natural gas heating; hand-power cellar lift to first floor, 6x3 ft.; cost \$20,000. Address Contr. (Lately noted.)

Va., Lynchburg.—Clubhouses.—R. C. Scott let contract to C. W. Williamson, Dearing St., Lynchburg, to erect building for Rivermont Athletic Club on Rivermont Ave.; 30x40 ft.; mill construction; shingle roof; cost \$3000; heating plant to cost \$300; J. I. Menefee, Archt., Marshall St., Lynchburg. (Lately noted.)

### RAILWAY STATIONS, SHEDS, ETC.

Tex., Goldthwaite.—Gulf, Colorado & Santa Fe R. R., F. Merritt, Chief Engr., Galveston, let contract to H. D. McCoy, Cleburne, Tex., to erect depot.

### SCHOOLS

Ark., Altheimer.—School Board, L. M. Quattlebaum, Secy., let contract to Chas. F. Dunnington, Pine Bluff, Ark., to erect school building; 2 stories and basement; ordinary construction; asbestos shingle roof; Fred Kraessig, Archt., 318 Citizens' Bank Bldg., Pine Bluff. (Lately noted.)

Fla., Wimauma.—School Board let contract at \$5130 to H. C. Blackburn & Co., Tampa, to erect school; 2 stories; 5 classrooms and auditorium.

La., Colfax.—Dist. No. 1, Grant parish, let contract to General Construction Co., Pine Bluff, Ark., to erect high school; Joe Carver, Archt. (Lately noted.)

Tenn., Knoxville.—Knox County School Board let contract to John Cox, Knoxville, to erect Beaumont and Camp Grove schools; 2 stories and basement; brick veneer; cost \$11,000 each. (Previously noted.)

Tex., Dallas.—Board of Education let contract at \$41,300 to Hewitt & Milner, Dallas, to erect addition to Fannin School; 8 rooms, basement and auditorium.

Tex., El Paso.—City let contract to R. E. McKee Co., El Paso, to erect Beal School on Alameda Ave.; 202x30x16 ft.; Barrett 5-ply roofing; cost \$12,000 without mechanical equipment; Trost & Trost, Archts., El Paso. (Lately noted.)

Tex., Josephine.—Josephine Independent School Dist. Trustees let contract to Tibbett & Hoger, Dallas, to erect school.

Va., Petersburg.—Chesterfield county let contract to G. B. Keeler & Son, Petersburg, to erect school; 40x60x30 ft.; ordinary construction; slate roof; steam heat; electric lights; cost \$25,000; Richard A. Munden, Archt., Petersburg. (Lately noted at Matoca.)

W. Va., Charles Town.—Miss M. P. Duval let contract to W. H. Whitmore to remodel building for St. Hilda's Hall School, formerly Powhatan College; about 100 rooms; metal roof; steam heat; electric lighting; cement sidewalks.

### STORES

Ala., Birmingham.—W. B. Leedy & Co. let contract to C. M. Allen & Sons, Birmingham, to repair brick building at 2126-28 1st Ave.; estimated cost \$3200. (Lately noted.)

Ark., Little Rock.—E. E. Moss let contract to M. O. Wendler, Little Rock, to erect store building at 314-16 Louisiana St.; 50x140 ft.; slow-burning construction; gravel roof; also let contract for wiring to Arkansas Electric Co. and for plumbing to A. V. Rogoski, both of Little Rock; cost \$13,000 without mechanical equipment.

Fla., Fort Meade.—Wilson Trading Co. let contract to W. H. Lutes, Fort Meade, to erect building; 50x100 ft.; brick; 1 story; plans and specifications by W. S. Wilson, Mgr., Fort Meade. (Lately noted.)

Fla., Kissimmee.—Dr. T. M. Rivers will erect 2-story brick business building; N. F. Bass, Contr., Kissimmee.

Fla., Mayo.—Masonic-Pythian Investment Co. let contract to erect store, office, bank and lodge building. (See Association and Fraternal.)



## MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

### "WANTS"

**Aluminum (Sheet).**—C. W. Evans, Imperial Bathhouse, Hot Springs, Ark.—Prices on sheet aluminum.

**Bank Fixtures.**—Lamar C. Carter, Secy., Masonic-Pythian Investment Co., Mayo, Fla. Prices on bank fixtures.

**Beds.**—H. H. Haywood, Abilene, Tex.—Prices on pivoted or secret beds.

**Boiler.**—Coats Hosiery Mill, Coats, N. C. Boiler for steaming hosiery; 5 H. P.

**Boilers.**—S. R. Biggs Iron & Motor Co., Williamston, N. C.—Prices on boilers, etc., for steam heating.

**Bolts and Nuts.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Apr. 6 on 1900 lbs. deck bolts and nuts and miscellaneous steel bolts and nuts, schedule 8071, delivery Charleston, S. C.

**Brick.**—Rev. J. R. Cason, pastor Methodist Episcopal Church, South Miami, Fla., and John Galsford, Archt., Memphis, Tenn. Prices on steel gray brick, common brick with clay or cement made; can be shipped by water; for \$35,000 church at Miami.

**Bricks.**—City of Bedford, Fla.—Bids until Apr. 19 for No. 1 paving brick to pave 3100 sq. yds.; specifications, etc., obtainable from City Clerk; Fred T. Williams, City Engr.

**Bridge Construction, etc.**—Lee County, Miss.—Let contract Apr. 5 to furnish one car steel I beams and channels, and to furnish and erect 60-ft.-span steel bridge; plans and specifications on file with County Chancery Clerk; L. G. Smith, Engr., Tupelo.

**Bridge Construction.**—Wetzel County Court, S. Myers, Clerk, New Martinsville, W. Va.—Bids until Apr. 6 at Clerk's office to construct concrete or steel bridge with concrete floor across Fallen Timber Run, about 1 mi. from Smithfield; bidders may submit proposals for construction of either "I" beam bridge with abutments, or for arch or steel bridge with concrete floor; plans and specifications for each type of bridge on file with Clerk.

**Bridge Construction.**—State Highway Com., Richmond, Va.—Bids at office of Patrick County Clerk, Stuart, Va., until Apr. 5 to construct steel bridge 100 ft. long over Mayo River; concrete substructure; plans and specifications on file at Clerk's office, Stuart, and office of State Highway Com., Richmond; further information on application to G. P. Coleman, State Highway Commissioner, Richmond.

**Bridge Construction.**—Pike County Commrs., Troy, Ala.—Bids until Apr. 21 to construct steel-concrete bridge over Conecuh River at Smiley's Crossing near Goshen; plans on file with Highway Dept. at Montgomery and Probate Judge at Troy; W. S. Keller, State Highway Engr., Montgomery.

**Bridge (Movable).**—See Cranes (Electric Traveling), etc.—Navy Dept.

**Brick Machinery.**—Kyle Lumber Co., Franklin, La.—Correspondence with manufacturers of brick-making machinery, especially for handling dirt from pit to machine.

**Bucket (Orange Peel).**—Geo. B. Curd, Merchants' Bldg., Cincinnati, O.—Orange-peel bucket, ¼-yd. capacity; for Louisiana delivery.

**Cableway.**—Harris Granite Quarries Co., Salisbury, N. C.—Prices on second-hand cableway, 5 tons capacity; 600 or 800 ft.

**Cannery Machinery.**—W. P. Chandler, Farmerville, La.—Machinery for small fruit and vegetable cannery.

**Cannery Equipment.**—E. E. Wattman, Bigheart, Okla.—Prices on complete equipment for cannery.

**Cannery Equipment.**—Newark Canning Co., Newark, Ark.—Bids on 20 to 30 H. P. vertical boiler, new or second-hand; 1 or 2 closed process retorts, 40 in. by 72 in. steam pressure; 6 doz. tomato-peeling knives; 10 doz. 14-qt. fiber buckets; 1 or 2 open process kettles, 40 in. by 72 in.; 15 4-tier can crates for kettles; platform scales, 1000 lbs. capacity; trucks, holsters, conveyors.

**Cars (Mine).**—See Mining Machinery, etc.—Harty Coal Co.

**Cement and Lime.**—See Mining Machinery, etc.—Harty Coal Co.

**Clock (Tower).**—G. Lloyd Preacher, Chronicle Bldg., Augusta, Ga.—Prices on tower clock for courthouse.

**Coal.**—Baltimore (Md.) Board of Awards, Bids at office City Register, City Hall, until Mch. 31 to furnish and deliver 13,000 tons anthracite coal and 41,000 tons bituminous coal; specifications obtainable from H. K. McCay, City Engr.

**Concrete Tank.**—City of Alliance, O.—Soon advertise bids on reinforced concrete elevated tank after plans and specifications by Chester & Fleming, Union Bank Bldg., Pittsburgh, Pa.

**Cotton Cloth.**—Depot Quartermaster's Office, Maj. Geo. H. Penrose, 25th St. and Grays Ferry Rd., Philadelphia, Pa.—Bids until Apr. 12 to furnish 150,000 yds. olive-drab cotton cloth.

**Cranes (Electric Traveling), etc.**—Navy Dept., Bureau Docks and Yards, H. R. Stanford, Ch., Washington, D. C.—Bids until Apr. 19 for two 2½-ton, 3-motor electric traveling cranes and movable bridge, delivered and erected at Naval Torpedo Station, Newport, R. I.; plans and specifications (Spec. 2147) on application to bureau or to commandant of naval station named.

**Culvert Construction.**—Board of Commissioners, Memphis, Tenn.—Bids until Mch. 23 to construct outfall culvert at North Memphis pumping station as follows: 175 lin. ft. reinforced concrete culvert, 5000 lin. ft. wood piling driven, 2000 cu. yds. excavation, 3000 lbs. extra steel reinforcement in place and 50 cu. yds. extra concrete; specifications and profiles on file with City Engr. and may be obtained for \$5; E. H. Crump, Mayor; C. C. Pashby, City Clerk.

**Dredge (Hydraulic).**—City of Lynn Haven, Fla., R. W. Beach, Sr., Clerk.—Bids until Apr. 15 on new or second-hand, good condition hydraulic dredge, with discharge pipe and other appurtenances, for dock construction, etc. (salt water), delivered Lynn Haven; maximum discharge to be 500 ft.; maximum height of discharge, 15 ft.; bidders to submit proposals on 8-in. or 10-in. dredge; steam or gasoline power; their own design, with complete detailed specifications and plans if for a new plant, or a complete description and list of pipe, etc.; if second-hand, stating time of delivery; guarantee required.

**Drillable.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Apr. 29 on drillable of vedette type, complete with power plant equipment and outfit, schedule 8058, delivery Pensacola, Fla.

**Drainage System.**—Directors Obion River Drainage Dist., J. A. Coble, Secy., Union City, Tenn.—Bids until Apr. 12 to construct about 1,564,300 cu. yds. levee work with floating dredge, about 631,700 yds. ditch work with floating dredge, and 3 reinforced concrete sluiceways, making about 600 yds. concrete, etc.; bids on whole or any part of work; specifications obtainable from Secy., Directors; work to be completed in 2 years.

**Dredge.**—R. R. Eagle, Engr., Newbern Drainage Dist., Newbern, N. C.—Steel dipper dredge; 1½-yd. dipper on hull, not over 16 ft.; second-hand, but as good as new.

**Dredging Machinery.**—See Pumps (Hydraulic Dredging), etc.—Box 245, Charleston, S. C.

**Drugs.**—See Soaps, etc.—Earle Whitton.

**Electrical (Terminal Tubes).**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Apr. 13 on terminal tubes, schedule 8067, delivery Charleston and Philadelphia.

**Electrical Equipment.**—See Water-works Equipment, etc.—Lambie & Demarke Light & Water Co.

**Electrical Work.**—L. W. Jones, Bowling Green, Ky.—Prices on electrical work for \$18,900 store, office and apartment building.

**Engine (Oil).**—See Water-works Equipment, etc.—Lambie & Demarke Light & Water Co.

Ga., Atlanta.—J. J. Haverty let contract to Pittman Construction Co., Atlanta, to erect 1-story brick store building at 225-7 Auburn Ave.; cost \$3000.

Ga., Atlanta.—Dr. W. B. Chandler let contract to erect store and office building; 2 stories; brick; 41x75 ft.; cost \$6000; R. L. Beutell, Archt., 203 Atlanta Trust Bldg., Atlanta.

Ga., Rome.—S. M. Lowry let contract to erect store building at Broad St. and 6th Ave.; 1 story; 4 stores; cost \$5000; plans to erect additional story later.

Ky., Glasgow.—Geo. R. Lewis let contract to L. W. Jones of Bowling Green and Glasgow, Ky., to erect lately-noted store, office and apartment building on Main St.; 4 stories; 41x100 ft.; steam heat; electric lights from city plant; Warsaw Elevator Co.'s hand freight elevator; cost \$18,900 without mechanical equipment; F. J. Manley, Archt., 90 City Natl. Bank, Lexington, Ky. (See Machinery Wanted.)

N. C., Charlotte.—D. P. Hutchinson let contract to J. A. Jones, 404 Realty Bldg., Charlotte, to erect store building on N. Tryon St. for S. H. Kress & Co., New York; 197x45 ft.; ordinary construction; composition roof; steam heat; conduit lighting system to cost \$2000; electric elevators; cost \$30,000 without mechanical equipment; Seymour Burrell, Archt., care of S. H. Kress & Co., 250 Broadway, New York. Address contractor. (Lately noted.)

Tenn., Nashville.—M. S. and Lou Lebeck let contracts as follows to erect store building at 158 8th Ave. North: Carpenter work,

J. M. Robinson; brick work, A. W. Hutchinson; cut stone, J. H. Peter & Co.; roofing, Chas. McInturf; plastering, Cooper & Ferguson; plumbing, Grady & Kleiser; concrete, Adamant Stone & Roofing Co.; all of Nashville; C. K. Colley, Archt., Nashville.

Tex., Hallettsville.—Mrs. L. Sheley let contract to erect brick business building to replace building recently burned.

Tex., Waco.—Rotan Realty Co. will erect building at Austin and 6th Sts.; 2 stories; 54½x100 ft.; provision for 3 to 6 additional stories; cost \$40,000.

### THEATERS

Va., Martinsville.—John Hamilton let contract to Geo. Finely, Martinsville, to erect Hamilton moving-picture theater; brick and concrete; metal ceiling; 1 story; tile flooring and marble base in bathroom; electric lights and fan; cost about \$9000 complete.

### WAREHOUSES

Ga., Lagrange.—Hillside Cotton Mills let contract to T. C. Thompson & Bro., Charlotte, N. C., and Birmingham, Ala., to erect 3-story main mill building, 19 warehouses, engine and boiler-rooms and 122 cottages of 3, 4, 5 and 6 rooms; completion by Oct. 15; Park A. Dallis Co., Archt.; 913 Candler Bldg., Atlanta, Ga. (Lately noted.)

La., New Orleans.—Carolina Portland Cement Co. let contract to J. A. Petty, New Orleans, to erect 2-story frame sheet metal warehouse; cost \$8563.10; Diboll & Owen, Archts., New Orleans. (Lately noted.)

## RAILROAD CONSTRUCTION

### RAILWAYS

Ala., Mobile.—Tidewater Securities Corporation, Van Antwerp Bldg., Mobile, has let contract to J. N. Gillis & Son, Brewton, Ala., to build 3.6 mi. of railroad from Alabama Port to Cedar Point. Construction to begin Apr. 1. J. M. Dewberry is Pres.

Ala., Tuscaloosa.—Fox Henderson, Troy, Ala., and associates are reported interested in plan to build 15-mi. railroad out of Tuscaloosa to timber lands.

Fla., Arcadia.—East & West Coast R. R. Co. has completed its line from Bradentown to Arcadia, 52 mi., and has operated the first train through.

Fla., Bartow.—Grading for the Lake Wales extension of the Seaboard Air Line is practically finished, and the contractor, A. F. Langford, is preparing to remove from Bartow to his headquarters at Valdosta, Ga.

Fla., Kenansville.—South Florida & Gulf Railroad Co. has completed about one-half of its 25 mi. line from Kenansville to Basinger, Fla., for which J. H. Jordan, 56 Pine St., New York, is Contr. C. H. Armstrong is Chief Engr. at Kenansville. F. P. Lynch is Pres.; Geo. D. Dayton, V.-P.; W. S. Dwinell, Treas., and C. J. Sweeney, Secy., 421 Endicott Bldg., St. Paul, Minn.

Fla., West Palm Beach.—Everglades Construction Co., general contractor for construction of the Palm Beach & Everglades R. R., has awarded contract to Sanders & Co. of Miami, Fla., to build canal and grade railroad southwest from the West Palm Beach and Lake Worth Canal, which is part of the proposed route.

Ga., Atlanta.—On the Atlanta & Carolina Interurban Railway 10 mi. of grade were built and 2 mi. of track laid some time ago. It is anticipated that construction will be resumed. Burton Smith, 1310-14 Third Nat'l Bank Bldg., and P. H. Alston are Atty's. Ronald Ransom, 1114 Hurt Bldg., Atlanta, has resigned as receiver of the property.

Ga., Byromville.—Flint River R. R. & Navigation Co. is reported to have let contract to Ricks & Co., Lilly, Ga., to build its proposed line from Hawkinsville via Unadilla, Byromville & Bakersfield to Albany, Ga., 80 mi., which requires one steel bridge of 250 feet and three wooden trestles. J. S. Morton is Gen. Mgr. at Byromville. (See Manufacturers Record March 11.)

Ky., Mayfield.—Illinois Central R. R. Co. does not at present contemplate building a connecting line between Mayfield and Gilbertsville, Ky., about 30 mi. This refers to a recent press report.

La., New Orleans.—Proposed extension of the Public Belt R. R. of New Orleans will be about 5 mi. long, with sidings and crossings of 2½ mi. more. Estimated cost \$75,000. E. R. Barnes is Engr. at City Hall.

N. C., Andrews.—E. Philbrick of Cornelia, Ga., says a report, has been appointed consulting engineer for the Graham County R.

R. concerning its line proposed from Andrews to Robbinsville, and he has established office at Andrews.

N. C., Edgemont.—Avery Northwestern R. R. Co. has elected P. M. Brown of Newland, N. C., Pres.; J. W. Ragland of the same place, Gen. Counsel, and W. W. Barber of Edgemont, Mgr. Line proposed from Edgemont to Newland, 21 mi. Engineering corps will complete survey from Ivy Gap to Newland, starting Apr. 7.

N. C., Greensboro.—North Carolina Public Service Co. denies that it will spend \$100,000 for improvements at High Point.

Tex., Denton.—Missouri, Kansas & Texas Ry. Co. denies press report that it would build a line from Denton to Krum.

Va., Newport News.—An extension of time to begin work has been granted by business men's meeting at Chamber of Commerce to the backers of the proposed Norfolk, Washington & New York Ry. from Newport News to Washington, D. C., about 150 mi. Construction must begin by Dec. 31 of next year. F. S. Gannon, 2 Rector St., New York, is prominently interested. Channing M. Ward, Richmond, Va., is Ch. Engr.

Va., Radford.—T. W. Simpson, Engr. in Charge, is reported to have completed about 50 per cent. of the location survey for the proposed Radford-Willis Southern Railway from Radford to Willis, Va., about 25 mi. Meeting to receive engineer's report will be held Apr. 10. John L. Vaughan of Shawsville, Va., is Pres.

W. Va., Beckley.—Virginian Ry. Co. will soon open bids for construction of 6 mi. of railroad from Stone Coal Junction, W. Va., to mines on Stone Coal Creek. Country rather rough. H. Fernstrom, Norfolk, Va., is Ch. Engr.

W. Va., Fairmont.—West Fork R. R. Co. is reported organized to build a line from Fairmont via Monongah to Grafton, W. Va., about 18 mi. Scott C. Lowe, M. A. Fletcher and J. A. Jamison are interested.

### Sealife Water Purifying System.

A booklet entitled "Central Power Station Economy," issued by the Wm. B. Scaife & Sons Company, 221 First Ave., Pittsburgh, Pa., contains an interesting discussion on water softening and purifying as one of the problems of the central power station. Another booklet recently issued by the company describes the "We-Fu-Go" or Scaife water softening and purifying system and its relation to the manufacture of pure, clear ice. The booklets will be sent to the readers of the Manufacturers Record upon request to the company. Recent contracts received by the Wm. B. Scaife & Sons Company include a steel-constructed paint shop erected on Preble Ave., Pittsburgh, for the Duff Manufacturing Co., and the structural-steel work for a new cisthouse, also stairs to the furnace-holst tower of the Josephine Furnace & Coke Co., Josephine, Pa.

**Engines (Hoisting).**—Geo. B. Curd, Merchants' Bldg., Cincinnati, O.—"8½x10 or 9x10 DC. DD hoisting engine with slew gear attached;" for Louisiana delivery.

**Escalators.**—See Stairways (Moving).—Martin & Co.

**Films.**—See Moving-picture Machinery, etc.—Clyde A. Hayes.

**Flumes (Wooden).**—Directors Cameron County Irrigation Dist. No. 1, Harlingen, Tex.—Bids until Apr. 10 to construct 1 or 2 wooden box flumes over Arroyo Colorado; plans and specifications on file at office of district at Harlingen.

**Forms (Cement Shingle).**—P. B. Ligon, Beaumont, Tex.—Correspondence with manufacturers of cement shingle forms.

**Gas-works Apparatus.**—Alabama Power Co., F. H. Chamberlain, Gen. Mgr., Birmingham, Ala.—Prices on 2 benches, 1 washer, 2 condensers, 1 scrubber, 2 purifiers and miscellaneous work; undertaken through Phoenix Construction Co. of New York, under direction R. J. McClellan, Ch. Engr.

**Glass (Plate).**—Lamar C. Carter, Secy., Masonic-Pythian Investment Co., Mayo, Fla. Prices on plate glass for 2-story building; 70x60 ft.

**Gloves (Canvas) Machinery and Materials.**—B. G. Parker, care Empire Realty & Mortgage Co., 1017 Tennessee Trust Bldg., Memphis, Tenn.—Data and prices on power machines to cut and sew cloth for canvas glove making; also prices on thread, knit wristband and gauntlet material, anton flannel, etc.

**Hammers (Pile Driving).**—Geo. B. Curd, Merchants' Bldg., Cincinnati, O.—One No. 2 and one No. 3 Vulcan steam pile hammers; for Louisiana delivery.

**Heating.**—Duval County Comms., Jacksonville, Fla.—Bids until Apr. 19 for installing plumbing and heating in Duval County Armory; plans and specifications at office of Frank Brown, Clerk, and Talley & Summer Co., Archt., 315 St. James Bldg., Jacksonville.

**Heating Plant.**—State Agricultural School, Jonesboro, Ark.—Opens bids within 30 days for heating plant; two 150 H. P. return-flue, 130 lbs. pressure steam boilers; deep well pump, 10-in. well; 125-ft. tower and 50,000-gal. water tank; ¼ in. 6 and 8-in. steam pipe and covering; 35 K. W. A. C. generator and direct-connected engine; 130x5-ft. reinforced concrete stack; feed water heater; V. C. Kays, Engr.

**Heating Plant Supplies.**—S. R. Biggs Iron & Motor Co., Williamston, N. C.—Prices on heating plant supplies.

**Holst.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Apr. 29 on electric-driven derrick holst, schedule 8065, delivery Puget Sound, Wash.

**Hose and Reels (Fire), etc.**—City of Livingston, Tex., A. T. Feagin, Mayor.—Bids Apr. 7 on fire hose, reels and water meters.

**Lathe (Engine).**—John G. Duncan Co., 308 Jackson Ave., Knoxville, Tenn.—Engine lathe; 6 to 8-ft. bed; 12 to 16-in. swing; second-hand; dealers' prices.

**Lighting Fixtures.**—Duval County Comms., Jacksonville, Fla.—Bids until Apr. 19 for installation of lighting fixtures in Duval County Armory; plans and specifications at office of Frank Brown, Clerk, and Talley & Summer Co., Archt., 315 St. James Bldg., Jacksonville.

**Lighting Systems (Hydrogen Incandescent).**—National Vaccine and Antitoxin Institute, Washington, D. C.—Addresses of manufacturers of hydrogen incandescent lights. Address J. H. Burton.

**Locomotives.**—Pidgeon-Thomas Iron Co., Memphis, Tenn.—Prices on 36-in.-gauge locomotive, 12 to 14 tons, and one of standard gauge, 15 to 20 tons; both Arkansas delivery.

**Looms.**—See Weaving Machinery.

**Lumber.**—See Mining Machinery, etc.—Harty Coal Co.

**Macadamizing.**—College Park, Lock Box 343, Frederick, Md.—Invites bids to macadamize 3d St. Ext., College Parkway, North College Parkway, College Ter. and Upper College Ter.; specifications on application.

**Manufactured Products.**—George C. Stringo, The Piraeus, Greece.—Interested in American manufactured products (both necessities and luxuries); view to representation.

**Matches (Safety).**—C. D. Davies, P. O. Box 163, Kingston, Jamaica, B. W. I.—Names and addresses of packers of safety matches interested in export trade.

**Merchandise.**—Salvatore Azzopardi, Malta.—Interested to correspond with Amer-

ican producers of following: Lard, provisions, dry-goods, hosiery, haberdashery, boots and shoes, tennis flannels, flannel and fleece shirts, toys, tweed caps, earthenware, glassware, lamps, kitchen utensils, cutlery, tapestry, carpets, underwear (men's and women's), flowers and feathers; delivery c. i. f. Malta; view to representation.

**Meters (Water).**—See Hose and Reels (Fire), etc.—Livingston, Tex.

**Mill Work.**—L. W. Jones, Bowling Green, Ky.—Prices on mill work, etc., for \$18,900 building.

**Mining Machinery, etc.**—Harty Coal Co., J. C. Sullivan, Mgr., Mullens, W. Va.—Prices on steel mine cars and mining machines; also building materials, including cement, lime, lumber, etc.

**Molds.**—See Forms (Cement Shingle).—P. B. Ligon.

**Mouldings (Copper and Nickel-plated).**—B. F. King, Newport News Furniture & Pattern Mfg. Co., Newport News, Va.—Addresses of manufacturers of copper and nickel-plated mouldings for outside and inside showcases.

**Monuments (Marble and Granite), etc.**—Thos. Grant, Box 492, North Sydney, Nova Scotia, Canada.—Catalogues, illustrations and dealers' prices on mural monuments of marble, granite, etc., and on tombstones.

**Motor.**—See Steel Bolts, etc.—Navy Dept.

**Moving-picture Machinery, etc.**—Clyde A. Hayes, 1009 3d Ave. S., Nashville, Tenn.—Prices on moving-picture machine and data and prices on films.

**Mural Monuments.**—See Monuments (Marble and Granite), etc.—Thos. Grant.

**Paving.**—City Comms., Birmingham, Ala.—Bids until Mch. 30 to pave First Ave. from end of Viaduct to 41st St., estimated cost \$40,000; bids received on asphalt, bitulithic wood block and brick; bids also until Mch. 23 for paving 10th Ave. from 26th to 28th St. with asphaltic concrete, estimated cost \$9000; Julian Kendrick, City Engr.

**Paving.**—Baltimore County Comms., Chas. J. Fox, Ch. Clerk, Towson, Md.—Bids until Apr. 1 to improve Old Court Rd., 1 mi., macadam; Belvedere Ave., Park Heights Ave. to Reisterstown Rd., concrete or bituminous resurfacing; Roland Ave., Deep Den Rd. to Lake Ave., concrete roadway and curb; Eastern Ave., 8th to 16th St., sheet asphalt curb and gutter; plans and specifications on file with Roads Engr., Towson.

**Paving.**—Baltimore (Md.) Board of Awards, John Hubert, Acting Prest.—Bids, care City Register, City Hall, until Mch. 31 to grade, curb and pave German St. from Eutaw to South with wood block and granite block on concrete base; contract No. 113; about 1700 sq. yds. wood block, 1000 granite block and 12,110 granite block redressed; specifications, etc., on application Paving Com., R. Keith Compton, Chrmn. and Consult. Engr., City Hall, on deposit \$5.

**Paving.**—Harris County Comms. and City Council, Houston, Tex.—Bids until Apr. 12 to construct Main-St. Blvd. from Bellaire Blvd. south towards city; bids to be based upon following materials laid on 6-in. concrete base, with 5-year guarantee as to each material bid upon: Standard brick, 4-in.; vertical fiber brick, asphalt filler, 3-in.; sheet asphalt, 2-in.; asphaltic concrete, 2-in.; bitulithic, 2-in.; wood blocks, 3-in. and 3½-in.; Uvalde rock asphalt, 2-in.; plans and specifications prepared by E. E. Sands, City Engr., on file with County Engr. Burnell; estimated cost \$334,560, including paving, drainage ditches, sewers and bridge at Harris Gulley; Ben Campbell, Mayor.

**Paving.**—City Council, Tarpon Springs, Fla.—Bids until Mch. 26 to grade, curb and pave Grosse Ave. from Tarpon Ave. to Cypress St.; Cypress St. from Grosse to Safford Ave.; Reed St. from Eagle St. to Canal St. and Spring Blvd.; Grand Blvd. from Orange to Hope St.; each street to be paved 9 ft. each side of center; granite or concrete curbing; vitrified brick or sand-asphalt paving; plans and specifications on file with J. S. Register, City Clerk.

**Paving, etc.**—City of Connellsville, Pa., John L. Gans, Purchasing Agent.—Bids until Apr. 5 to grade, curb and pave certain streets; also for paving block and for construction of new sewers; information with Chas. F. Hirst, City Engr., Second National Bank Bldg.

**Pipe and Fittings.**—Bond & Fedell, 403 Vickers Bldg., Baltimore, Md.—Quotations on 2000 to 3000 ft. 14-in. black iron water pipe and fittings; second-hand; all threads and pipe to be in good condition.

**Plumbing.**—L. W. Jones, Bowling Green, Ky.—Prices on plumbing for \$18,900 store, office and apartment building.

**Plumbing.**—See Heating.

**Press (Hosiery).**—Coats Hosiery Mill, Coats, N. C.—Press (hand) for pressing hosiery.

**Pump (Compressed Air).**—A. E. Lewis, 24 Real Estate Bldg., Miami, Fla.—Prices on compressed-air pump and pressure water tanks for water-works.

**Pumps.**—See Water-works, Council Committee on Water, Lynchburg, Va.

**Pumps.**—See Water-works Equipment, etc.—Lambe & Demarke Light & Water Co.

**Pumps (Hydraulic Dredging), etc.**—Box 245, Charleston, S. C.—Second-hand 12-in. hydraulic dredging pump, direct connected with engine; 30-ft. ladder with cutter head and suction pipe; ladder to be hinged to front of scow; guaranteed good order.

**Railway and Tram Equipment, etc.**—H. L. Hill, Box 154, New Smyrna, Fla.—Interested in railway and tram equipment and supplies (view to representation) in Spanish America; would take on 10 non-competitive lines.

**Road Construction.**—Mineral County Court, J. V. Bell, Clerk, Keyser, W. Va.—Bids until Apr. 6 to construct road from Blaine to Elk Garden, in Elk Dist.; specifications on file with Clerk.

**Road Construction.**—Swain County Road Dist., Bryson City, N. C.—Open bids Apr. 10 to construct 26 mi. road; T. M. Howerton, Engr.

**Road Construction.**—Lake County Commissioners, J. H. Compton, Chrmn., Tavares, Fla.—Bids until Apr. 15 for about 200 mi. highways, comprising following: 1,091,046 lin. ft. roadway, 329,630 cu. yds. excavation, 1,147,610 sq. yds. pavement, 301.62 cu. yds. concrete, 1554 lbs. square deformed steel, 5146 lbs. reinforced concrete steel, 885 lin. ft. 12 to 24-in. terra-cotta drains, 1552 ft. pole line to be moved, 57 bridges to be raised; bids on sand-clay, shell, modified asphalt, water-bound macadam, macadam with romac binder and oiled macadam; determine material after bids are in; expenditure \$500,000; J. B. McCrary Co., Engr., Third National Bank Bldg., Atlanta, Ga. (Latest noted.)

**Road Construction.**—Coosa County Comms., Rockford, Ala.—Bids until Apr. 19 to grade, drain and surface with top soil part of Rockford and Keleton Rd.; expenditure \$4616.26; W. S. Keller, State Highway Engr., Montgomery.

**Road Construction.**—Kanawha County Court, M. P. Malcolm, Prest., Charleston, W. Va.—Bids until Apr. 3 at Courthouse for grading and paving in Union, Charleston, Malden and Loudon Dist.; plans and specifications on file office of F. G. Burdett, County Engr., Courthouse, Charleston.

**Road Construction.**—Maryland State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Apr. 13 to build about 6.18 mi. State highway as follows: Contract AB-8, Baltimore city, sections of Maryland Ave. and on Russell, Bush and Ridgely Sts., 0.33 mi., brick, sheet asphalt and granite block; contract BC-3A, Baltimore city, Frederick Ave. over Gwynn's Falls bridge, 0.24 mi. vitrified brick paving; contract O162B, Garrett county, 3.73 mi. resurfacing from Thayerville towards McHenry; contract CE-18, Cecil county, 1.38 mi. concrete or macadam, through Elkton from Little Elk bridge to first cross-road, and from Pennsylvania crossing to Big Elk bridge; specifications and plans on application to Com.

**Road Machinery.**—City of Columbia, S. C.—Bids until Apr. 6 to furnish either 20 H. P. double cylinder steam traction engine or 20-40 H. P. or 40-60 H. P. gasoline or oil traction engine; also horse or tractor road grading machine; bidders to submit complete plans and specifications, covering full details for both tractors and graders, and submit price f. o. b. Columbia, S. C., together with guaranteed date of delivery; John McNeal, City Engr.; R. C. Keenan, Councilman-Supt. Street Dept.

**Road Construction.**—Marion County Comms., Hamilton, Ala.—Bids until Apr. 13 at Courthouse to construct State-aid road leading from corporate limits of Gula, Ala., south to county line; profiles, plans and specifications on file with W. S. Keller, State Highway Engr., Montgomery, and of County Highway Engr., Hamilton, after Apr. 5; amount available, \$4608.13.

**Road Construction.**—City Comms., Abilene, Tex.—Bids opened Mch. 25 to construct 18,300 sq. yds. roadway with gravel; plans and specifications on file with City Engr.; H. J. Bradshaw, City Engr.; P. L. Kirk, Secy.

**Sawmills.**—W. A. Woody, Denniston, Va. Prices on good light second-hand sawmills.

**Scales.**—Newark Canning Co., Newark, Ark.—Platform scales, 1000 lbs. capacity.—See Cannery Equipment.

**Seating.**—W. H. Carr, Leesburg, Fla.—Bids (opened Apr. 5 at Tavares, Fla.) on following seating: 462 30-in., 26 19-in. and 18 18-in. opera chairs, floor incline 1 in. to 1 ft., and 224 20-in. opera chairs, floor incline 1½ in. to 1 ft.; guarantee; delivery Leesburg.

**Sewer Construction.**—See Paving, etc. City of Connellsville, Pa.

**Sewer Construction.**—City Council, Fort Myers, Fla.—Bids until Apr. 1 to construct 3011 ft. sanitary sewers, consisting of 725 ft. 12-in. pipe, 716 ft. 10-in. pipe and 1570 ft. 8-in. pipe; Y branches, 5 manholes with covers and 2 flush tanks; average depth of sewers, 4 ft.; specifications on file with J. A. Davison, City Engr.; John W. Owens, City Clerk.

**Sewer Construction.**—Mayor (A. R. Crumpler) and Comms., Clinton, N. C.—Bids until Apr. 23 to construct about 5½ mi. vitrified pipe sewers, 8 to 12 in. diam.; specifications, etc., on file office of Mayor, and obtainable from Wm. M. Platt, Engr., Durham, N. C.

**Sewer Construction.**—City of Richmond, Va., Chas. E. Bolling, City Engr.—Bids until Apr. 2 to construct section of Bacon Quarter branch sewer of reinforced concrete, about 1150 ft., from west line of 2d St. to station, 100x75; specifications, etc., on application; bidders required to examine location.

**Sewer Construction.**—W. E. Chambers, Purchasing Agent, Atlanta, Ga.—Bids until Mch. 30 to construct following sewers: White Provision Co., brick trunk sewer, from 14th St. to Howell Mill Rd.; Highland Ave.-Briar Cliff Rd. sanitary sewer extension, from St. Louis Ave. 8500 ft. north; also three following sewers in one contract: Spring St. from 10th St. north to flush tank, Benjamin St. from Wells St. to trunk near Bluff St., Frederika St. from Ponce de Leon Ave. to St. Charles Ave.; plans and specifications at office of Purchasing Agent.

**Shovel (Traction).**—Hotel Construction Co., Pulaski, Va.—Traction shovel; type O, ½ yd.

**Shovel (Steam).**—D. D. Thomas & Son, Selmitar Bldg., Memphis, Tenn.—Prices on steam shovel, about 1½ yds. capacity; would consider new machine, or second-hand machine in perfect condition and guaranteed, or might lease shovel.

**Soaps, etc.**—Earle Whitton, care Whitton-Wheeler Construction Co., 911 E. Washington St., Louisville, Ky.—Addresses of manufacturers of castile and cheap toilet soaps and drugs.

**Stairways (Moving).**—Martin & Co., Box 622, Houston, Tex.—Addresses of manufacturers of escalators or moving stairs; wants prices on one unit, 5 ft. wide, to reach landing 15 ft. high; state weight.

**Steel.**—L. W. Jones, Bowling Green, Ky.—Prices on steel for \$18,900 four-story building.

**Steel and Iron, etc.**—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Apr. 7 to furnish steel, iron, steel and iron pipe, pipe fittings, steel wire, cap screws, stovepipe elbows, bronze bars, babbitt metal, white brass, sheet brass, sheet and bar copper, copper tubing, brass tubing, brass clean-outs, lead pipe, sheet lead, sheet zinc, solder, spades, portable forges, screw eyes, window glass, rubber tires, manila rope, cotton waste, towels, chamois skins, soap, soap polish, candles, lye, litharge, white lead, white zinc, linseed oil, alcohol and paints; blanks and general information relating to this circular (No. 508) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1096 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

**Steel Beams, etc.**—Lamar C. Carter, Secy., Masonic-Pythian Investment Co., Mayo, Fla.—Prices on steel I beams and steel ceiling for 2-story building; 70x60 ft.

**Steel Bolts, etc.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Apr. 6 for delivering steel bolts, washers, hoops, liners, plates and shapes and motor at navy-yard, Washington; for proposals apply bureau.

**Steel I Beams.**—See Bridge Construction, etc.—Lee County, Miss.



**Stone.**—War Dept. U. S. Engr. Office, Room 325, Custom-house, New Orleans, La.—Bids until Apr. 13 to furnish and deliver about 10,000 cu. yds. stone at South Pass and Southwest Pass, Mississippi River; information on application; Edw. H. Schultz, Maj., Engrs.

**Structural Steel.**—Board of Purchase, E. R. Conant, Purchasing Officer, Savannah, Ga.—Bids until Mch. 30 to furnish 12 tons fabricated steel for roof framing for covering water-works reservoir; specifications, drawings and other information obtainable from Purchasing Officer.

**Tanks (Water).**—See Pump (Compressed Air).

**Tank.**—Farmers' Cotton Oil & Trading Co., Uniontown, Ala.—Tank on 75-ft. trestle; 20,000 gals. capacity; for sprinkler system installation.

**Tanks (Septic Sewage).**—A. E. Lewis, Real Estate Bldg., Miami, Fla.—Prices on septic tank for sewage.

**Telephone System Franchise.**—City, J. L. Waddle, Mayor, Somerset, Ky.—Will sell 20-year franchise for continuance of telephone system at Council Board meeting Apr. 12.

**Telephone System.**—Treasury Dept., Office of Wenderoth, Supervising Archt., Washington, D. C.—Bids opened Apr. 21 to install intercommunicating telephone system for U. S. Dist. Atty. offices in U. S. Courthouse and Postoffice, New York; specifications obtainable at this office or office of Supervising Chief Engr. at discretion of Supervising Archt.

**Tile (Flooring).**—Lamar C. Carter, Secy., Masonic-Pythian Investment Co., Mayo, Fla.—Prices on tile flooring for 2-story structure; 70x60 ft.

**Transmission Line.**—Prestonsburg (Ky.) Electric Light Co.—To let contract for building 8-mi. transmission line between Van Lear and Prestonsburg; 11,000-volt, 3-phase line, on 35-ft. chestnut poles; will let contract for line complete, or will furnish all but poles and labor. Address L. L. Stone, Mgr., Sandy Valley Light & Power Co., Pikeville, Ky.

**Trucks.**—See Cannery Equipment.—Newark Canning Co.

**Umbrella Manufacturing and Materials.**—L. R. Stark, 829 E. Jefferson St., Louisville, Ky.—Data on umbrella manufacturing and addresses of manufacturers of umbrella goods.

**Water-works.**—Council Committee on Water, Krise Bldg., Lynchburg, Va.—Bids until Apr. 6 to build emergency pumping station and install booster pump; work as follows: Div. No. 1—2 brick buildings; No. 2—3 centrifugal pumps; No. 3—transformers, motors and other electrical equipment; No. 4—cast-iron pipe valves, etc.; No. 5—liquid chlorine apparatus; H. L. Shaner, City Engr.

**Water-works.**—Board Town Commrs., East New Market, Md.—Bids Apr. 15 to construct water-works system; furnishing and laying about 1200 ft. 4 and 6-in. water mains, 5 fire hydrants, concrete receiving basin, pumping station, and tower and tank, etc.; plans at office F. E. Loomis, Secy., Commrs., or at office of Kastenhuber & Anderson, Engrs., Easton, Md.

**Water-works Construction.**—City of Vivian, La., J. D. Houston, Clerk.—Bids until Apr. 16 to furnish material and construct water-works; \$35,000 bonds; plans and specifications at office of Clerk, or obtainable from Edw. W. Gantt Co., Engr., Dallas, Tex.

**Water-works Equipment, etc.**—Lambe & Demarke Light & Water Co., Arkansas City, Ark.—Data on pumps, oil engines and electrical equipment; contemplates installing Diesel or semi-Diesel type power plant, with suitable pumps, to take water from well of 9-ft. lift and deliver in 100-ft. tank.

**Water-works System.**—G. Lloyd Preacher, Archt., Chronicle Bldg., Augusta, Ga.—Prices on water-works system, either tower and tank, and pumps with gas engine drive or air system with tank.

**Weaving (Machinery).**—D. D. Williams, Shelby, N. C.—To correspond with manufacturers of machinery for weaving fancy lap-ropes with designs such as pictures of noted persons.

**Wharf Construction.**—Port Commrs., Ernest M. Loeb, Prest., Suite 200 New Orleans Court Bldg., New Orleans, La.—Bids until Apr. 7 to construct pile and timber wharf on east bank Mississippi River between Soniat and Bellechasse Sts.; also pile timber approach to same; plans and specifications on file with Ford, Bacon & Davis, 221 Canal St., New Orleans, by whom copies will be furnished on deposit of \$25.

**Wine (Kola).**—C. D. M. Davies, P. O. Box 163, Kingston, Jamaica, B. W. I.—Names and addresses of shippers of kola wine interested in export trade.

**Woodworking (Turning and Boring) Machinery.**—Alex. M. Sinclair, Gordon, Ga.—Addresses of manufacturers of machines to turn and bore wooden plugs for ends of rolls of paper.

### Vertical Farming.

Gilbert Ellis Bailey, professor of geology, University Southern California, has written a little volume, entitled "Vertical Farming," which is quite as interesting as its title indicates. Dr. Bailey believes the time has come for the farmer to extend his study and effort to greater depths in the soil than are reached by the usual agricultural implements, and he sustains his point of view very ably with arguments showing the latent fertility of the subsoil and its capacity for storing moisture, once it has been disturbed, to a depth of five or six feet by the use of explosives. Dr. Bailey also argues that blasting the subsoil is but a logical extension of the theory of cultivation. Incidentally, the book contains a very thorough and well illustrated discussion of the origin of soils, which is well worth reading. The increase in use of subsoil plows, deep tillage machinery and the explosives for breaking up resistant and impervious subsoil indicates that many progressive farmers will agree with Dr. Bailey's opinions, and now that the price of all food crops is so high, farmers in general are interested in any means for increasing crop productions. The book is distributed without charge by the E. I. du Pont de Nemours Powder Co., Wilmington, Del.

**Universal Safety Standards.** By Carl M. Hansen, C.E. Publisher, Universal Safety Standards Publishing Co., Philadelphia. Price \$3.

The first volume of the Universal Safety Standards, Machine Shop and Foundry, by Carl M. Hansen, M.E., chief engineer of the Workmen's Compensation Service Bureau, New York city, member of American Society of Mechanical Engineers, is a handbook of concrete examples of safeguarding and rules for practice in machine shops and foundries. This is the first of a series of books which will be issued under the direction of the Workmen's Compensation Service Bureau in the course of the next two or three years. The titles of the others will be Woodworking, Leather and Shoe, Mercantile and Theaters, Textile and Clothing, Brick, Pottery and Glass, Paper, Printing and Allied Trades, Miscellaneous. These books will all be compiled under the direction and with the approval of the Workmen's Compensation Service Bureau. They will all bear the endorsement of the leading compensation and liability insurance companies, and these standards will be exclusively used in fixing the rates for workmen's compensation insurance under the Universal Analytic Schedule.

The present book is classified into four parts: General, Machine Shop, Foundry, and Rules and Practices. Each division touches practically all cases that arise under that classification. The book is confined to the conservation of life and limb rather than the conservation of property, and touches hazards in this way.

## FINANCIAL NEWS

### FINANCIAL CORPORATIONS

Ark., Texarkana.—J. D. Sanderson Abstract Co. has filed articles of incorporation; capital \$10,000. Incprts.: J. D. Sanderson, A. G. Sanderson, H. G. Sanderson and J. G. Sanderson.

Fla., Arcadia.—DeSoto National Bank has purchased the business of the Commercial State Bank of Arcadia. Application has been made to the Comptroller of the Currency to increase capital from \$50,000 to \$75,000; W. G. Welles, Prest.; C. G. Davis and R. E. Whidden, V.-Ps.; B. F. Welles, Cash.; L. A. Stroud, Asst. Cash.

Fla., Kissimmee.—First National Bank of Kissimmee is approved; capital \$50,000; organizers, G. T. Singletary, E. L. Lesley, O. Bass, B. C. Miller and W. M. Davis.

Ga., Macon.—Southern Co-operative Fire Insurance Co. has made application for charter; organizers, John R. Vinson, Robert W. Freeman, Otis C. Anderson, Thomas W. Stokes and Edgar D. Leverette.

Ga., Savannah.—The Real Estate Bank & Trust Co. of Savannah and the National Bank of Savannah have been combined under the name of the latter with officers as follows: Jacob S. Collins, Prest.; Sigo Myers, Chrmn. of the Board; Wm. W. Williamson, Robert M. Hicks, John E. Foy and Grover C. Paulsen, V.-Ps.; R. R. Withington, Cash., and F. D. Bloodworth, Mgr. Foreign Exchange Dept. The capital of the National Bank of Savannah is \$400,000, with surplus and profits of about \$600,000, and the capital of the Real Estate Bank & Trust Co. is \$300,000, with surplus and profits of about \$100,000.

Ga., Statesville.—Bank of Statesville is chartered; capital \$25,000. Incprts.: L. J. Cooper of Waycross, J. G. Prime, T. M. Ray, T. C. Ham, A. G. Garbutt, S. A. Smith, C. T. Ham and A. J. Rice of Statesville.

Ga., Winder.—North Georgia Trust & Banking Co. has made application for charter; capital \$100,000. Incprts.: W. H. Toole, A. A. Camp, T. A. Maynard, W. C. Horton and John M. Williams.

Ky., Bowling Green.—The American National Bank has absorbed the Warren National Bank; capital stock \$125,000 and surplus will remain about the same. J. Whit Potter is Prest.

Ky., Paducah.—Jackson Purchase Insurance Co. is organized with R. B. Phillips, Prest.; Richard Rudy, Treas.; R. A. Williams, Secy.

Ky., Wilmore.—The Wilmore Building and Loan Association incptd.; capital \$100,000. Incprts.: H. H. Wetzel, A. P. Jones, J. L. Cough, J. W. Hinkle, A. A. Arnold, A. L. Smith, J. T. Rhorer and others.

Miss., Tupelo.—Tupelo Building and Loan Association has filed articles of incorporation; capital \$100,000. Incprts.: M. E. Leake, J. Q. Robins, W. W. Trice, J. M. Thomas and S. P. Clayton, S. J. High and J. N. Berry.

Mo., Hunter.—Bank of Hunter is reported organized by E. B. Joy and others.

Mo., St. Louis.—Walker-West Investment Co. has filed articles of incorporation; capital \$1,100,000. Among the stockholders are Allen T. West and L. Kotany.

N. C., Grimesland.—On April 1 the Greenville Bank & Trust Co., Greenville, N. C., will open a branch banking institution at Grimesland. J. O. Proctor of Grimesland will be manager.

N. C., High Point.—Independent Insurance & Investment Co. is chartered; capital, \$50,000 authorized and \$5000 subscribed; organizers, W. R. Morrow, O. E. Mendenhall and L. B. Mendenhall.

N. C., Raleigh.—Mutual Fire Insurance Co. is chartered; incorporators, G. H. Dortch, G. H. Andrews, J. H. Andrews, T. B. Parker, Daniel Allen, A. Horne, W. B. Swindell, W. L. Brogren and W. H. McElwee.

Okla., Gowen.—First State Bank incptd. and chartered; capital \$10,000; surplus \$1000; N. E. Tuell, Prest.; Wm. Kellar, V.-P.; E. W. Frey, Cash.

Okla., Oklahoma City.—Oklahoma Building & Investment Co. chartered; capital \$25,000; incorporators, J. B. Myers, Cleveland; E. B. Wentworth and M. Swatek of Oklahoma City.

Okla., Oklahoma City.—Oklahoma Health & Accident Insurance Co. chartered; incorporators, John T. Acree, Thomas E. Toney and W. A. Johnston, all of Oklahoma City.

Okla., Tulsa.—Citizens' Investment & Loan Co. is chartered; capital \$50,000; incorporators, H. B. Frederick, E. L. Tolman and S. C. French.

Tenn., Finger.—Home Banking Co. is organized with paid-up capital of \$8000; J. R. Harris, Prest.; W. P. Massey, V.-P., and L. A. Weaver, Cash.

Tenn., Johnson City.—The Savings Loan & Trust Co. Bank, capital \$15,000, has begun

business with Jas. G. Vinea, Prest.; R. M. Shannon of Saltville, Va., Cash.

Tex., Tyler.—The Guaranty State Bank is reported to have absorbed the State Bank & Trust Co.

Tex., Waco.—First National Bank is reported to have absorbed the Farmers & Merchants' State Bank.

Tex., Winters.—First National Bank, succeeding the Winters Banking Co., is organized with \$25,000 capital. Henry James of Abilene, Prest.; Jim Ridgers, Winters, V.-P.; D. H. Hilyard, Cash.; W. C. Franklin, Asst. Cash.

Va., Brookneal.—Bank of Brookneal will increase capital from \$10,000 to \$25,000 and then convert into the First National Bank of Brookneal; E. T. Yesman, Cash.

### NEW SECURITIES

Ala., Bessemer.—Bids will be received until Apr. 6 for \$30,000 5 per cent. 30-year \$1000 school bonds. Dated June 1, 1914; maturity June 1, 1944. J. B. Houston is City Clerk.

Ala., Birmingham.—The \$1,250,000 floating indebtedness bonds to be voted on Apr. 12 are 30-year 5 per cents. H. S. Ryall is City Clerk.

Ala., Dadeville.—Election is to be held Apr. 26 to vote on \$14,000 6 per cent. 10-year water-works bonds. H. E. Berkstresser is Mayor.

Ala., Elba.—\$16,500 5 per cent. 30-year sanitary sewer and water-main-extension bonds are to be sold at private sale. W. M. Tucker is Mayor.

Ala., Huntsville.—All bids received for the \$40,000 5 per cent. 30-year high-school bonds offered Mch. 16 were rejected. Effort will now be made to dispose of the bonds at private sale. J. D. Humphrey is Mayor.

Ark., Ashdown.—\$45,000 Sewer Dist. No. 1 and \$39,000 Water Dist. No. 1 6 per cent. bonds have been purchased by James Gould, Pine Bluff.

Ark., Batesville.—\$15,000 Batesville Special School Dist. bonds have been purchased by Speer & Dow of Little Rock, Ark., at par.

Ark., Lake City.—\$75,000 bonds Craighead County Drainage Dist. No. 12 have been purchased by Altheimer & Rawlings Investment Co., St. Louis.

Ark., Sheridan.—\$160,000 bonds Road Improvement Dist. No. 1, Grant county, have been purchased by Gunter & Smith of Little Rock. J. L. West is County Judge.

Fla., Apalachicola.—\$30,000 5 per cent. 20-year bonds Special Tax School Dist. No. 1, Franklin county, have been purchased by Cutter, May & Co., Chicago. A. A. Cole is Supt. Public Instruction.

Fla., Arcadia.—\$350,000 Zolfo Dist. No. 5, De Soto county, road and bridge bonds were purchased by Terry, Briggs & Slayton of Cleveland, O.

Fla., Bartow.—\$15,000 5 per cent. 20-year bonds School Dist. No. 13, Polk county, were purchased by Powell, Garard & Co., Chicago.

Fla., Bartow.—\$15,000 5 per cent. 20-year bonds School Dist. No. 6, Polk county, have been purchased by Bumpus & Co., Detroit.

Fla., Bradentown.—\$130,000 bonds Bradentown road and bridge district, Manatee county, defeated.

Fla., DeLand.—Election will be held in Fourth Dist. of Volusia county in about 6 weeks to vote on bonds. Address J. D. Malley, Commr. Fourth Dist.

Fla., Fort Myers.—Election is to be held in Lee county May 1 to vote on \$300,000 road and bridge bonds. Address County Commr.

Fla., Fort Meade.—Election is to be held Apr. 5 to vote on \$25,000 5 per cent. 20-year bonds Special Tax School Dist. No. 4, Polk county. C. W. Parker is Secy. Board of Public Instruction Polk County at Bartow, Fla.

Fla., Fort Pierce.—Ordinance has been prepared providing for the issuing and sale of \$10,000 6 per cent. 10-year warrants; denomination \$500. Address The Mayor.

Fla., Jacksonville.—Dispatch to Manufacturers Record says \$1,000,000 5 per cent. 30-year Special Tax School Dist. No. 1 school bonds dated Apr. 1, 1915, are voted. It is probable that entire issue will soon be placed on the market. F. A. Hathaway is Supt. Public Instruction.

Fla., Manatee.—\$35,000 water, \$25,000 sewer and \$40,000 street 5 per cent. 20-30-year bonds have, it is reported, been purchased by the National Bank of Commerce, Toledo, O.

Fla., Seminole.—Steps are reported being taken to hold an election to vote on \$5000 school bonds. Address Board School Trustees.

Fla., Zolfo.—Zolfo-Popash Sub-School Dist.

has voted \$12,500 of graded school bonds. Address J. O. Bickley, Supt. Public Instruction, Arcadia, Fla.

Fla., Sarasota.—\$250,000 Sarasota-Venice, Manatee county, road and bridge bonds were voted Mch. 17. Address M. G. Rush-ton, Chrmn. County Commrs., Manatee. (Previously mentioned.)

Fla., Tampa.—\$5000 Oak Park Dist., Hills-borough county, school bonds have been purchased by Cutter May & Co., Chicago, at par and accrued interest.

Ga., Atlanta.—Question of issuing bonds for various improvements is being agitated. Address The Mayor.

Ga., Decatur.—\$25,000 school, \$7000 water-works and \$18,000 sewer 5 per cent. 30-year \$1000 bonds are voted; dated July 1, 1915. F. T. Hopkins is Mayor and A. J. Brown Clerk of Council.

Ga., Hawkinsville.—\$30,000 water and sewer extension and \$15,000 school 5 per cent. 29-year bonds have been purchased by W. M. Davis Co. of Macon at a premium of \$175.

Ga., Rome.—Bids will be received until noon Mch. 29 for \$75,000 4 per cent. municipal building bonds; dated Apr. 1, 1915; due \$5000 Apr. 1, 1925, and \$5000 annually thereafter. Address Hugh McCrary, Clerk of Council. J. D. Hanks is Mayor. Further particulars will be found in the advertising columns.

Ky., Barbourville.—\$200,000 Knox county road and bridge bonds are voted. Address County Commrs. R. P. Black, Clerk.

Ky., Madisonville.—Election will be held in Hopkins county May 8 to vote on \$300,000 road and bridge bonds. Will T. Mills is County Judge.

La., Alexandria.—Bids will be received until noon Mch. 29 by C. E. Robinson, Prest. Police Jury Rapides Parish, for \$100,000 5 per cent. 10-year bonds Road Dist. No. 2 road and bridge construction bonds.

La., Collinston.—\$15,000 5 per cent. 10-year Morehouse Parish School Dist. bonds have been purchased by Powell, Garrard & Co., Chicago.

La., Jennings.—July 29 election is to be held in Jefferson Davis parish to vote on \$400,000 road bonds. L. E. Robinson is Clerk.

La., Vivian.—Bids will be received until 3 P. M. Apr. 16 for \$35,000 5 per cent. 30-year water-works bonds. Address J. D. Houston, Clerk. Further particulars will be found in the advertising columns.

Md., Cumberland.—Bids will be received until 9.30 A. M. Mch. 25 for \$150,000 4½ per cent. \$1000 paving bonds; dated Sept. 1, 1914. A. W. Straub is City Clerk.

Md., Hagerstown.—Election is to be held Mch. 23 to vote on \$65,000 4½ per cent. 10-22-year series 1 park bonds. J. McP. Scott is Mayor.

Mo., Kennett.—At public auction on Apr. 5 Drainage Dist. No. 23, Dunklin county, will sell \$1000 6 per cent. bonds. Chas. S. Shultz is Clerk County Court Dunklin County.

Mo., Kennett.—\$7000 water-works bonds are voted. Clyde Onkes is Mayor.

Miss., Jackson.—Election is soon to be held to vote on \$50,000 for Mississippi State Fair and \$65,000 for school. Address The Mayor.

Mo., Clarence.—Election is to be held Apr. 1 to vote on \$27,000 water-system bonds. Address The Mayor.

Mo., Kansas City.—City is reported to have sold \$285,621.35 6 per cent. park certificates. Thos. C. Harrington is Secy. Park Commrs.

Mo., Kansas City.—Ordinance has been introduced in the City Council authorizing issue of \$150,000 market-house bonds. Address The Mayor.

Mo., New Madrid.—\$47,500 of the \$50,000 5 per cent. \$500 New Madrid county courthouse and jail bonds offered Mch. 16 were purchased at \$1824 premium by Little & Hays Investment Co., St. Louis, Mo., and Kaufman-Smith-Emery Co.

Mo., St. Louis.—\$2,750,000 4½ per cent. 20-year municipal bridge bonds were purchased by the following local parties at premiums totalling \$117,885.34: Smith, Moore & Co., 509 Olive St., \$1,648,000; Business Men's League, \$2000; Althemer & Rawlings Investment Co., \$750,000; Mechanics-American Bank, \$350,000.

Mo., University City (P. O. St. Louis).—Bids will be received until 8 P. M. Mch. 31 for \$60,000 \$1000 school district bonds; dated Apr. 1, 1915; maturing serially \$3000 per year from 1919 to 1923, inclusive, and \$5000 1923 to 1934, inclusive; interest 4½ or 5 per cent. Address Frank Hamsher, Secy. Board of Education.

N. C., Angier.—Election is to be held in May to vote on Angier high-school district school bonds. Address Board of Trustees.

N. C., Angier.—Black River township, Harnett county, has voted \$2500 road bonds. Address Road Commrs.

N. C., Asheville.—It is now stated that the citizens of West Asheville, Buncombe county, propose to issue \$35,000 of bonds instead of \$30,000 school bonds, as recently reported. Address Supt. of County Schools.

N. C., Belmont.—Issue of \$25,000 school bonds is authorized by Legislature. Address Board of Education.

N. C., Benson.—Legislature has authorized \$30,000 school bonds. Address Board of Education.

N. C., Bethel.—Issue of \$10,000 school bonds is authorized by Legislature. Address Board of Education.

N. C., Chapel Hill.—Legislature has authorized issue of \$35,000 school bonds. Address Board of Education.

N. C., Cherryville.—Legislature has authorized issue of \$50,000 school bonds. Address Board of Education.

N. C., Fair Bluff.—Fair Bluff Dist. is authorized by Legislature to issue \$6000 school bonds. Address County Commrs.

N. C., Fuquay Springs.—Issue of \$25,000 school bonds is authorized by Legislature. Address Board of Education.

N. C., Greenville.—Issue of \$30,000 school bonds is authorized by Legislature. Address Board of Education.

N. C., Kittrell.—Legislature has authorized issue of \$15,000 Kittrell township school bonds. Address Board of Education.

N. C., Lexington.—Bids will be received until noon Apr. 5 for \$300,000 20-40-year \$1000 Davidson county road bonds; interest 4½, 4% and 5 per cent.; dated May 1, 1915; \$100,000 will be delivered at once. Another \$100,000 will be issued six months later, and the remaining \$100,000 six months after that. Lee V. Phillips is Secy. Board of County Commrs.

N. C., Lincoln.—\$10,000 of school bonds are voted. Address The Mayor.

N. C., Lillington.—\$10,000 school bonds are authorized by Legislature. Address Board of Education.

N. C., Elm City.—Bids will be received until 2 P. M. April 7 for \$7000 6 per cent. 20-year bonds. Address Clarence Winstead, Clerk.

N. C., Fair Bluff.—Fair Bluff Dist. is authorized by Legislature. Address Board of Education.

N. C., Jamestown.—Election is to be held in Guilford county Apr. 20 to vote on \$15,000 bonds for high-school building at Jamestown. Address County Commrs. at Greensboro.

N. C., Lincolnton.—\$10,000 of bonds for paying off existing indebtedness and making improvements to school are voted. Address Board of Aldermen.

N. C., Maxton.—Maxton School Dist. is authorized by Legislature to issue \$20,000 school bonds. Address Board of Education.

N. C., Monroe.—Legislature has authorized issue of \$15,000 school bonds. Address Board of Education.

N. C., Mount Airy.—Legislature has authorized issue of \$25,000 school bonds. Address Board of Education.

N. C., Mt. Gilead.—Issue of \$30,000 school bonds is authorized by Legislature. Address Board of Education.

N. C., Newbern.—Election is to be held in Craven county, April 6, to vote on \$80,000 Newbern Rd. Dist. bonds. Address County Commrs.

N. C., Raleigh.—Legislature has authorized issue of \$100,000 school bonds. Address Board of Education.

N. C., Raleigh.—A dispatch to the Manufacturers Record says that \$57,000 5 per cent. 30-year bonds issued for funding floating debt and making certain improvements have been purchased by Alexander Brown & Sons, Baltimore, at \$2628.84 premium. W. H. Sawyer is City Clerk.

N. C., Smithfield.—Bids will be received until noon Apr. 10 for \$12,000 6 per cent. 5-30-year bonds issued for funding indebtedness incurred in completion of water-works, electric-light plant and sewer system. Address Jas. A. Wellons, Mayor. Further particulars will be found in the advertising columns.

N. C., Reidsville.—\$20,000 of school bonds are authorized by the Legislature. J. B. Pipkin is Chrmn., Committee Reidsville Graded Schools.

N. C., Selma.—Issue of \$40,000 school bonds is authorized by Legislature. Address Board of Education.

N. C., Tryon.—Issue of \$3000 school bonds

is authorized by Legislature. Address Board of Education.

N. C., Taylorsville.—The \$15,000 Alexander county road-improvement bonds recently voted are 5 per cents. Address County Commrs.

N. C., Taylorsville.—Bids will be opened Apr. 6 for \$50,000 of the \$150,000 5 per cent. 30-year Alexander county road bonds voted Apr. 9, 1915; denomination \$1000; dated Apr. 1, 1915; maturity Apr. 1, 1945. Address J. T. Hedrick.

N. C., Waynesville.—Election is to be held May 4 to vote on \$25,000 electric power plant bonds. Address The Mayor.

N. C., Wilmington.—City has sold at \$2190 premium \$100,000 5 per cent. bonds to take up floating indebtedness. Thos. D. Meares is City Clerk and Treas.

Okla., Chandler.—Election is to be held Apr. 6 to vote on \$5000 water-works bonds. Address The Mayor.

Okla., Checotah.—Election is to be held Mch. 26 to vote on \$30,000 water-works improvement bonds. Address The Mayor.

Okla., Spiro.—\$10,000 of bonds are voted. Address The Mayor.

Okla., Tulsa.—Election is to be held Apr. 12 to vote on \$300,000 bonds for bridge across Arkansas River. Address Grant R. McCullough.

Okla., Wilburton.—The \$100,000 water-works bonds to be voted on Apr. 6 are 20-year 6 per cents. Denomination \$100. L. P. Bobo is Mayor.

S. C., Anderson.—\$100,000 street-paving bonds are voted. Bonds are to be placed on the market. J. H. Godfrey is Mayor.

S. C., Greenville.—\$60,000 5 per cent. 35-year Greenville county bonds will soon be placed on the market. D. B. Traxler is Chrmn. Courthouse Com.

S. C., Manning.—\$20,000 5 per cent. 20-year Clarendon county public-debt bonds have been purchased by F. O. Richardson of Manning, representing R. M. Grant & Co. of New York.

S. C., Ridgeland.—\$10,000 of high-school bonds have been purchased by R. M. Grant & Co., Chicago.

S. C., Mullins.—Bids will be received until noon April 1 by F. Chalmers Rogers, Clerk Board of Education, for \$12,000 6 per cent. 20-year high-school-building bonds, dated June 2, 1914.

S. C., Spartanburg.—Bids will be received until 4 P. M. Apr. 8 for \$35,000 6 per cent. 15-year promissory notes secured by mortgage on City Hall; denomination \$7000; J. F. Floyd is Mayor and T. J. Boyd Clerk and Treas.

Tenn., Alamo.—Crocket county has sold an issue of bonds to be used for taking up floating debt. Address County Commrs.

Tenn., Clarksville.—City Council has adopted a resolution authorizing issue of refunding bonds. Address The Mayor.

Tenn., Cleveland.—Bill is in the Legislature authorizing city to amend charter to issue bonds. Address The Mayor.

Tenn., Columbia.—City will apply to Legislature for authority to amend charter and issue bonds, not exceeding \$30,000, to retire floating debts of city. Address The Mayor.

Tenn., Dickson.—City has for sale \$5000 5 per cent. 30-year \$1000 water-main extension bonds, voted Aug. 26, 1914. It was recently stated the bonds had been purchased by a Chicago firm. W. H. Walker is Mayor.

Tenn., Knoxville.—Knox county \$500,000 road-bond bill has passed third reading in the Legislature. Address County Commrs.

Tenn., Jackson.—\$100,000 5 per cent. 1-12-year bonds authorized by Madison county to cover floating debt have been purchased by I. B. Tigrett, Prest. and Agt. Mercantile Union Trust Co., Jackson.

Tenn., Maryville.—Dispatch to the Manufacturers Record says \$55,000 5 per cent. 30-year water bonds are voted and will be placed on the market at once. Sam Everett is Mayor.

Tenn., Maryville.—Bids will be received until 1 P. M. Apr. 6 for \$100,000 of an issue of \$300,000 5 per cent. 10-35-year Blount county pike bonds; denomination \$500 and \$1000; dated Apr. 15, 1915. R. P. M. Reynolds is Chrmn. County Court. Further particulars will be found in the advertising columns.

Tenn., Memphis.—Bids will be received until 8 P. M. Apr. 13 for \$15,000 6 per cent. street-improvement bonds. Albert Herr is Mayor.

Tenn., Nashville.—Bids will be opened Apr. 13 for \$430,000 5 per cent. street-improvement bonds, dated Apr. 1, 1915, and maturing Apr. 1, 1916, to Apr. 1, 1935, inclusive. J. W. Dashiell is Secy. Board of Commrs.

Tex., Austin.—The Attorney-General has approved the following securities: \$7000 6 per cent. 10-40-year Willis Point water-works bonds; \$4000 5 per cent. 25-year bonds Bell County Road Dist. No. 16.

Tex., Brownwood.—Brown county is considering question of issuing \$80,000 road bonds. Address County Commrs.

Tex., Galveston.—Bids will be received until 11 A. M. Apr. 5 for \$46,500 5 per cent. road and \$42,000 4 per cent. seawall and breakwater, Galveston county, bonds. John M. Murch is County Auditor.

Tex., Giddings.—City proposes to float \$10,000 deficiency warrants to continue street work. W. H. Cherry is City Commr.

Tex., Haslet.—Election will be held Apr. 6 (not Apr. 3 as previously stated) to vote on \$10,000 5 per cent. 40-year \$1000 school bonds Common School Dist. No. 97. Address Jim Burgess at Haslet.

Tex., Longview.—\$300,000 Gregg county road bonds are voted. Address County Commrs.

Tex., Karnes City.—Elections were held in Karnes county to vote on the following road bonds: Mch. 22, Dist. No. 1, \$75,000; Mch. 24, Dist. No. 2, \$200,000; J. B. Smiley is County Judge.

Tex., Kaufman.—The \$225,000 5 per cent. bonds Justice Precinct No. 2, Kaufman county, offered Mch. 12 were withdrawn from the market. Road bonds will soon be offered. James A. Cooley is County Judge.

Tex., Port Lavaca.—Election is to be held Apr. 10 to vote on \$35,000 5 per cent. 40-year bonds Road Dist. No. 2, Calhoun county. F. M. Dudgeon is County Judge.

Tex., Port Lavaca.—Election is to be held Apr. 5 to vote on \$19,500 5 per cent. 40-year street bonds. John B. Mahon is Mayor.

Tex., Sinton.—\$15,000 6 per cent. 10-year San Patricio county refunding warrants have been purchased by J. L. Arlitt, Austin, Tex. M. A. Childers is County Judge.

Tex., Victoria.—Election is to be held Mch. 27 to vote on \$40,000 electric-light bonds. Address The Mayor.

Va., Christiansburg.—\$35,000 Blackburg Dist., Montgomery county, road bonds have been sold at par and \$300 premium. Address County Commrs.

Va., Gate City.—\$68,000 Taylor Dist., Scott county, road bonds are voted. Address County Commrs.

Va., Norfolk.—Bill has passed Legislature authorizing issue of \$500,000 bonds for funding certificates of indebtedness. Address The Mayor.

Va., Portsmouth.—Board of Water Commissioners has requested Council for authority to issue \$200,000 of an issue of \$600,000 5 per cent. 30-year water-works bonds voted in 1911. No action has as yet been taken on the matter. F. J. Wright, Jr., is Engr. for Board Water Commrs.

W. Va., Benwood.—City has under consideration question of issuing \$100,000 water plant purchase, \$20,000 levee and \$10,000 fire department bonds. Address The Mayor.

W. Va., Grafton.—Bids will be received until 3.30 P. M. Apr. 5 for \$110,000 5 per cent. 10-34-year bonds Grafton Independent School Dist., dated July 1, 1914. W. M. Watkins is Secy. (Previously mentioned.)

W. Va., Grantsville.—Bids will be received until Apr. 5 for \$10,000 6 per cent. 10-34-year \$100 water-works and sewer bonds voted Feb. 20, 1915. L. M. Williams is Mayor and S. F. Waldo, Recorder.

W. Va., Keyser.—Bids will be received until noon Mch. 30 for \$25,000 5 per cent. Keyser School Dist. bonds; dated July 1, 1915, and maturing 1931. J. C. Sanders is Supt. Board of Education.

## FINANCIAL NOTES

The annual meeting of the North Carolina Bankers' Association will be held at Wrightsville Beach, near Wilmington, on June 30 and July 1 and 2. W. A. Hunt, Henderson, N. C., is Secy.

John M. Murch, County Auditor at Galveston, Tex., is inviting proposals for the sale to Galveston county of \$42,000 of its 4 per cent. seawall and breakwater bonds. Further particulars will be found in the advertising columns.

The stockholders of the Consolidated Gas, Electric Light & Power Co. of Baltimore have approved the increase of its capital stock from \$20,000,000 to \$30,000,000. The \$10,000,000 of new stock is not to be issued immediately, but will be put out from time to time as may be required. Some of it will be reserved to provide for the conversion feature of the new two-year notes.



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HAVE opened an office in Raleigh, N. C., for sale of bank and office supplies. Would like to correspond with some manufacturers of such goods, as our lines are not complete. Filing cases, labor-saving devices, novelties, anything in the line used by jobbers, manufacturers, banks. Bankers' Supply Co., Raleigh, N. C.

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MANUFACTURERS' AGENT desires agency for lines pertaining to builders' specialties for Grand Rapids and Western Michigan. Address Manufacturer's Agent, 643 Michigan Trust Bldg., Grand Rapids, Mich.

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WE ARE CONSULTING ENGINEERS backed by a competent staff and a modern machine plant that can save you money if you are interested in designing or building special machinery, special tools, experimental work, models, etc. If you have patented an article which is not perfected, a consultation with our expert mechanic is at your command. We are giving attention to developing patents and marketing patented articles, especially labor-saving appliances. Our list of office appliances is available. We invite correspondence and will give estimates promptly and cheerfully. Specialty Manufacturing-Sales Corp., Norfolk, Va.

## COAL-MINING STOCK

AN UNUSUAL OPPORTUNITY to secure an interest in a splendidly equipped operation in the Pocahontas field, working the original No. 3 seam, 5 feet thick. The management is in the hands of the wealthiest and most successful operators in the field. Over \$400,000 has been spent on the improvements, and the works have never lost a day for want of orders. The large stockholders and directors represent a tonnage of several millions annually and a wealth of many millions of dollars.

Particulars as to the directors and stockholders will be furnished to bona-fide interested parties. The unusual conditions prevailing for the past year compels the owner (a non-resident) to sacrifice the stock, which will be sold for \$50 per share, par value \$100, and it cost that. Terms easy; \$10 per share down and \$10 per share per month. Certificates in one-share lots or any number. Brokers protected. Address No. 1684, care Manufacturers Record, Balto., Md.

## FACTORY SITES

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candler, President The Coca-Cola Co.; "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

BIG BUSINESS AT YOUR DOORS in a great metropolis is better than remote location with big freight bills.

New York plants have proved winners.

Foreign money for great purchases comes to New York. Why don't you?

## AN OPPORTUNITY.

Extra good factory or warehouse site, spur track for car lots, street cars pass, subway station near, handy to freight yards for less car lots and public docks. Will entertain financing required buildings.

Write J. Julian Hall, 18 Broadway, New York City, for particulars.

## INDUSTRIES WANTED

### MISCELLANEOUS

WEST POINT, VIRGINIA, is ideally located for manufacturers of many lines; rail and water transportation; low freight rates. Investigate. Chamber of Commerce.

## INDUSTRIAL PLANTS FOR SALE

### INTERIOR TRIM PLANT

INTERIOR TRIM PLANT FOR SALE.—For quick sale, the best factory in the South for manufacture of furniture or interior trim. Special advantages in rates, taxes, labor, raw material, both yellow pine and hardwoods. Plant is new, fireproof, and insurance rate is 66 cents per \$100. Sale price is less than half the cost. Write for particulars and photographs. J. P. Mulherin, Trustee, Augusta, Ga.

### BOILER, MACHINE AND BLACKSMITH SHOP

BOILER, machine and blacksmith shop in Illinois. Will sell entire plant or part interest to experienced manager. An especially good opportunity for the proper party. Decatur Novelty Works, Decatur, Ill.

### FOUNDRY AND MACHINE SHOP

FOR SALE—Foundry and machine shop in Kansas City; established 25 years; doing \$100,000 to \$125,000 business yearly; 1 1/2 acres land, brick buildings, in center of manufacturing district; having practically a monopoly on architectural castings in the city, and making large amount of machine castings. Very attractive price and terms. Address No. 1728, care Manufacturers Record, Balto., Md.

## BRICK PLANT

FOR SALE—A brick plant in a good town doing a good business; great opportunity for a practical brick man. Price right; terms easy. W. T. Pitts, The Land Man, Indianola, Miss.

## CANDY FACTORY

FOR SALE—Candy manufacturing outfit (installed in brick, sprinklered factory, Lynchburg, Va.). Complete equipment, valued at \$30,000, in hands of receiver. Can be bought very cheap, either to continue the business or dismantle. For further details apply to Carrington, Stevens & Co., Agents, Lynchburg, Va.

## MATTRESS AND EXCELSIOR PLANT

FOR SALE—Well-established mattress and excelsior plant, situated in a splendid town, and excellent territory; running continuously 20 years; now doing a good business; health of owner only reason for selling. If interested write No. 1729, care Manufacturers Record, Balto., Md.

## COTTON MILL

POWER SALE.—One hundred water-power cotton mill, originally costing thirty thousand dollars. Will take ten thousand dollars for immediate sale. Sacrificing for cash. Joseph Freeman, Blakely, Ga.

## MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

ZINC-JOPLIN DISTRICT—BUY FEES. Safe; fortunes made without risk; reliable information; here 25 years; best references. A. B. McConnell, 115 E. 4th St., Joplin, Mo.

HAVE YOU A VALUABLE PROPERTY FOR SALE? Farm, timber land, mineral property or any other? We can help you get in touch with possible purchasers by an advertisement in these columns. For rates see head of this department.

FOR SALE—3000 acres, containing 8,000,000 to 10,000,000 feet virgin timber, 10,000 cross-ties, 4000 telephone poles, the finest deposits of mica, kaolin, feldspar, talc and uranium. Also one of the finest water-powers in Western North Carolina, in 3 1/2 miles of R. R. For further particulars write H. W. Pardue, Johnson City, Tenn.

## GOLD MINING PROPERTY

80-ACRE GOLD-MINING PROPERTY, TENN.—Property shows 3 veins of gold which assays \$5, \$10.50 and \$24 per ton. This is a real gold mine, the owner of which has not sufficient funds to develop the same and has authorized me to offer it for sale at \$20,000. Full details and copy of assay on request. Arthur M. Connor, Oxford Bldg., Washington, D. C.

## WHITE MARBLE QUARRY

FOR SALE—The whitest white marble in the country. The quarry is inexhaustible and is within 50 yards of a railroad. The stone will stand a pressure of 23,000 lbs. to the square inch. Address A. M. Hughes, 2310 Park Pl., Washington, D. C.

## GRAVEL PIT

FOR SALE—1/2 interest in one of best pits in Oklahoma or Texas; material good for concrete, ballast or good roads; located on railroad; operating continuously and paying large net income. No. 1719, care Manufacturers Record.

## COAL LAND

FOR SALE CHEAP TO CLOSE AN ESTATE.—600 acres coal, undeveloped, near Piedmont, W. Va., alongside Western Maryland tracks. Upper Freeport, Bakerstown and Lower Kittanning veins. R. A. H., Box 5, Parsons, W. Va.

## COAL LAND FOR SALE

2500 ACRES good coal land, \$32 per acre, terms, 5000 acres, \$30 per acre. Southeastern Kentucky. No agents. Benton B. Miller, Elizabethtown, Ky.

## TIMBER FOR SALE

REAL TIMBER BARGAIN.—50,000,000 ft. 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Mulherin (owner), Augusta, Ga.

SEVERAL MILLION FEET FINE CYPRESS for lumber, shingles, poles and ties; fronts railroad distance three miles; near Mississippi River; will sell in bulk or contract any amount of logs on cars or barges or at a mill yard, or will contract output of lumber and shingles. Address H. H. Co., Box 241, Hickman, Ky.

## TIMBER LAND FOR SALE

36,000 ACRES of virgin long-leaf yellow pine, located in Alabama, estimated 8000 feet per acre; convenient to rail and river transportation; has never been turpentine; absolutely virgin. For particulars write T. J. Buzard, Manager Timber Department, 410 Schmitz Building, Memphis, Tennessee.



# Classified Opportunities

WE HAVE FOR SALE a controlling interest in a metal-manufacturing business established for 30 years; has always paid good profits. Capital stock of the company is \$300,000; rating is the highest credit in the Commercial Agency. Business in 1914 was about \$500,000. Reason for selling, owner of controlling interest is old and wishes to retire from active business. Business is located in Chicago. Full particulars, including public accountant's statement, furnished on application. C. Frank Taylor, 407 Fort Dearborn Bldg., Chicago, Ill.

**FOR SALE—TIMBER LAND.**—3500 acres in Washington county, Mississippi; about 3 miles to railroad station; practically a solid block; well drained by good bayous; all virgin timber—never been cut over. Timber consists of white oak, red oak, gum, pecan, elm, ash, maple, cypress, persimmon and hackberry. A conservative estimate made 7 years ago gives total of 12,500,000 feet; much greater now. Fine sawmill site. All rich alluvial soil. Price \$22.50 per acre. Terms. Address Hazelrigg & Ladd, 30 S. 7th St., Terre Haute, Ind.

## FRUIT, FARM AND TRUCK LANDS

**SOUTHERN FARMS** are absolutely sure to advance in price during the next few years. No other form of investment so safe. We have five million dollars' worth of farm lands for sale and every tract is a bargain. We have branch offices in all Southern States. Write us for descriptions. The Osborne Land Company, Farm Specialists, Bristol, Tenn.

THESE COLUMNS ARE CLOSELY READ BY PEOPLE for information of all kinds about Southern properties of every description. If you have a property of any kind that you want to dispose of, try an advertisement in these columns. Others have to their advantage. For rates see head of department.

## ALABAMA

**GOOD INVESTMENT.**—We offer for sale 13,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes.

This tract can be purchased for the low price of \$7 per acre. Will arrange terms. J. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

## ARKANSAS

**HOMESTEAD LAND IN ARKANSAS.**—Thousands of acres of good land yet to be taken. For 50 cents will send map showing land with full instructions how to get it. Jerry Witt, Atty., Mt. Ida, Ark.

## FLORIDA

**FREE.**—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to the Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

**PINEY POINT, the Deep-Water City.** Other towns and would-be towns have to fight and wait for appropriations to get deep-water facilities.

Nature made it for us, and in addition gave us immunity from frost, for just north of Piney Point is the broad expanse of Tampa Bay.

Terapia Island and the Manatee River towns and farms have good water protection, but not deep water. We have both.

Also an abundant supply of artesian water for all purposes.

Nature laid the foundation. We are doing the rest. Will you join us? The Piney Point Land & Improvement Co., Palmetto and Piney Point, Fla. Jno. W. Jackson, Manager.

**THE PALATKA FARMS COMPANY** of Palatka, Florida, offers to homeseekers the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Becks, Palatka, Fla.

**FOR SALE.**—Seven-acre farm almost in the city limits of Jacksonville, Fla. If you want a farm that will support you handsomely and steadily enhance in value, this is a bargain for you. Price \$6500. Long terms. J. M. Turner, owner, Box 1063, Jacksonville, Fla.

**HAVE ANY KIND OF LAND** to be found in South Florida and am too old to improve. Write me. W. H. Cox, M.D., Brooksville, Fla.

**REAL FARM LAND** in 40-acre tracts, \$15 to \$25 per acre; good terms. Write E. L. Williams, Perry, Florida, for particulars.

**HAVE 23,500 acres of high (no swamps)** land in Orange county, Florida, a few miles west of Orlando in the Lake region. This land can be bought right at this time. Write Chandler Campbell, Hamburg, Iowa.

**I HAVE Florida land and timber** for sale; a bargain to party with sufficient cash, or will pay nice commission for assistance in making sale. Chas. B. Harman, Gainesville, Fla.

**FLORIDA ORANGE GROVE FOR \$99.**—Five minutes' walk from street car to Pensacola, a city of 30,000. 25 cents reserves a grove and brings full particulars with photo album of twenty colored views. Send today, as groves are limited. National Land Sales Company, Box 625, Pensacola, Fla.

**SOUTH FLORIDA FRUIT AND TRUCKING LANDS.**—We are wholesalers of Southern Lands and have choice South Florida lands along the line of the Florida East Coast Railroad which we are offering at attractive prices. These are splendid lands for colonization purposes, being fertile and well located. Write us for particulars. Albert Fendig & Co., Brunswick, Georgia.

**CREAM OF THE FLORIDA EVERGLADES.**—Price per acre: Fruitland, \$30; competing land, \$65 to \$80. Reason: Co-operation vs. private profit. Thomas Elmer Will, Ft. Lauderdale, Fla.

**I OFFER FOR SALE** for sixty days some of the finest fruit and farm lands in Polk county, situated near the city of Lakeland, the best town in the best county in the State of Florida, in tracts of 5000 to 18,000 acres. For quick sale will sell at much less than actual value. It is on railroad. Geo. C. Barton, Lakeland, Fla.

**FOR SALE.**—82 acres of pine land and hammock land; 500 orange trees, 300 grapefruit trees; both are seedling and budded; 2000 boxes; 6-room house; 1 good stable; in 3 years 5000 boxes; close to the Caloosahatchee River; 3 miles west of La Belle. Cash, \$14,000, or \$7000 cash down and balance 2 or 3 years with 8 per cent. J. N. Blount, owner, La Belle, Fla.

**FOR SALE.**—Astor Estate, Lake county, Florida, on St. Johns River, 10-acre tracts, \$40 to \$60 per acre. Terms, \$1 cash per acre and \$1 per acre per month. Literature free. Address J. F. Darnelle, Box 66, Fort Monroe, Va.

**FOR SALE.**—Timber, turpentine, grazing lands, colonization tracts, and farms in all parts of South; dividend-paying orange, grapefruit and pineapple groves; truck and farm lands, rural water-front and town residential properties, improved and unimproved properties of all kinds, boats and yachts in Florida. Write for our lists. Waters Realty Co., Walton, St. Lucie Co., Fla.

**FOR SALE.**—Water-front in small tracts on Manatee River, Florida; soil survey shows ideal citrus soil; fine home sites; boating, fishing; close to cities, Tampa Bay and Gulf resorts; flowing wells. Address Manatee River Land Co., Inc., 101 1/2 Franklin St., Tampa, Fla.

## LOUISIANA

**TRACT of sandy land**, about 1000 acres, on Mississippi River, twenty-eight miles from New Orleans; two railroads through property; fully equipped with building, etc. Apply F. Montegut, La Place, La.

## MARYLAND

**FOR SALE.**—Several fine farms and country estates adjacent to Baltimore City; fine boulevard roads. W. E. Ferguson, 217 St. Paul St., Balto., Md.

**LAKE SHORE FARM.**—Over 315 acres, on good macadam road; good buildings; bank barn; right at wharf. \$35 per acre. J. S. Linthicum & Co., 126-9 Law Bldg., Balto., Md.

## MISSISSIPPI

**IS HE CRAZY?** The owner of a plantation in Mississippi is giving away a few five-acre tracts. The only condition is that the tracts be planted. The owner wants enough figs raised to supply a canning factory. You can secure five acres and an interest in the factory by writing Eubank Farms Company, 601 Keystone, Pittsburgh, Pa. They will plant and care for your trees for \$6 per month. Your profit should be \$1000 per year. Some think this man is crazy for giving away such valuable land, but there may be method in his madness.

**FOR SALE—ON EASY TERMS.**—Fine plantation, in the heart of the Yazoo Delta, in Bolivar county, the largest cotton producing county in Mississippi, consisting of 3000 acres, and upwards of 2000 acres in a high state of cultivation; a large acreage now in oats, trucking, sugar-cane, pastures and other diversification; sufficient mules and horses, corn, hay, implements, seed, etc., for the year 1915; has an up-to-date, improved system gin, electric-light plant, grist mill and blacksmith shop; a large two-story store and residence, a manager's residence and 50 tenant-houses, all practically new, built on brick piers, laid in cement; a new barn costing \$2500, with individual stalls, two silos and a dipping vat, and, in fact, everything necessary for an up-to-date, modern and money-making. Main line of the Yazoo & Mississippi Valley Railroad runs in front of property for two miles. A railroad station and ticket office, express and post office on premises. Must sell on account of bad health. Address Louis Waldauer, Greenville, Miss.

## OKLAHOMA

**\$75 CASH** buys 160-acre farm; 40 years' time to pay for balance of \$1500; send 50c. for particulars. Address E. F. Galbraith, 632 West 9th St., Oklahoma City, Okla.

## TEXAS

**72 ACRES**, mostly alfalfa, all in cultivation, 16 miles of El Paso; no better soil; \$90 per acre; \$60 under value.

**\$70 per acre**, 60 acres in alfalfa. Now get busy. Can take trade on both of these.

**\$35 per acre**, 27 miles north of El Paso, 460 acres. Will sell 100 or all. Fine to subdivide. White-Paden Realty Co., 11-12-13 Morgan Building, El Paso, Tex.

## VIRGINIA

**VIRGINIA FARMS.**—Fine blue grass, grain and dairy farms in the heart of the Piedmont section of Virginia, Culpeper, Fauquier and adjoining counties. Ask for catalogue. The L. M. Allison Co., Real Estate Brokers, Remington, Va. Established 1895.

**VIRGINIA ESTATES.**—Colonial homes, plantations, farms, suburban homes, Albenmarle pippin orchards, timber lands. Write us for what you want. We have it. H. N. Flanagan & Co., Charlottesville, Va.

**ESTABLISHED 1893.**—From long experience we are thoroughly familiar with lands and values and have some genuine bargains listed. Tell us what you want and let us submit some special offerings. Southern Farm Agency, Lynchburg, Virginia.

## PATENTS FOR SALE

**PATENT FOR SALE.** Issued Jan. 19, "Sanitary Siphon Head for Bottles." No metallic contact. Superior to all others and as cheap to manufacture as any on market; our right or part interest. For particulars address A. P. Mara, 1902 Rutger St., St. Louis, Mo.

## PATENT ATTORNEYS

**EUGENE C. BROWN, ENGINEER AND PATENT LAWYER**, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

**VALUABLE INVENTIONS** justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1885. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

**PATENTS THAT PROTECT AND PAY.** Advice and books free. Highest references. Best results. Promptness assured. Trade-mark registered.

Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

**"WORDS OF VALUE TO INVENTORS"** sent free; should be carefully read before applying for patents. John R. Woodworth, Registered Atty., Ward Bldg., Wash., D. C.

**MONEY IN PATENTS.**—I secure your patent or return my fee. Manufacturers want Mills patents. Write for free booklet, "How to Get Your Patent and Make Your Profits Thereon." I assist in selling your patent. Mansell F. Mills, Registered U. S. Patent Atty., 252 Com. Nat. Bank Bldg., Washington, D. C.

**PATENT YOUR IDEAS.**—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

**C. L. PARKER, Patent Lawyer**, formerly member Examining Corps, U. S. Patent Office, 924 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process or machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instructions furnished upon request.

**PATENTS.**—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

**PATENTS** secured or fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

# PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

## GOVERNMENT PROPOSALS

**TREASURY DEPARTMENT**, Supervising Architect's Office, Washington, D. C., March 22, 1915. Sealed proposals will be received at this office until 3 P. M. April 17, 1915, and then opened, for new lookout galleries in the U. S. Courthouse and Postoffice at Louisville, Ky., in accordance with drawing No. 201-A, and specification, copies of which may be had at this office or from the Custodian at Louisville, Ky. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT**, Supervising Architect's Office, Washington, D. C., March 22, 1915. Sealed proposals will be opened in this office at 3 P. M. April 19, 1915, for the construction, complete (including mechanical equipment), of Medical Officers' Quarters at the United States Marine Hospital, Wilmington, N. C. The building is a

two-story frame structure with a ground area of 900 square feet. Drawings and specifications may be obtained from the Custodian at Wilmington, N. C., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT**, Supervising Architect's Office, Washington, D. C., March 18, 1915. Sealed proposals will be opened in this office at 3 P. M. April 20, 1915, for the construction, complete (including mechanical equipment) of the receiving building for the Philadelphia, Pa., Immigration Station (Gloucester, N. J.). The building is a one-story frame structure with a ground area of 23,000 square feet. Drawings and specifications may be obtained from the Commissioner of Immigration at Gloucester City, N. J., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT**, Supervising Architect's Office, Washington, D. C., March 17, 1915. Sealed proposals will be opened in this office at 3 P. M. April 29, 1915, for making betterments in the U. S. Postoffice and Courthouse at Pensacola, Florida. Drawings and specifications may be obtained from the Custodian at Pensacola, Fla., or at this office. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT**, Supervising Architect's Office, Washington, D. C., March 12, 1915. Sealed proposals will be opened in this office at 3 P. M. April 23, 1915, for the extension, remodeling, etc., of the United States Postoffice, Courthouse and Custom-house at Toledo, Ohio. Drawings and specifications may be obtained from the custodian at Toledo, Ohio, or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT**, Bureau of Engraving and Printing, Washington, D. C., March 15, 1915. Sealed proposals will be received at this office for furnishing oils, etc., during the fiscal year beginning July 1, 1915, until 2 P. M. Monday, May 3, 1915. Awards will be made only to established manufacturers of or dealers in the articles. The right is reserved to reject any or all bids or parts of bids. Blank forms with specifications for proposals and further information will be furnished intending bidders on application to JOSEPH E. RALPH, Director of Bureau.

**GOVERNORS ISLAND, N. Y.** March 15, 1915. Sealed proposals, in triplicate, for furnishing Forage and Straw (three months' and a year's supply) and Fuel, Gasoline, Mineral Oil, Beef and Mutton, required in Eastern Department during year commencing July 1, 1915, will be received here until 11 A. M. April 14, 1915. Information furnished on application to Department Quartermaster.



# PROPOSALS

BOND ISSUES

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GOOD ROADS

## GOVERNMENT PROPOSALS

**PROPOSALS FOR STEEL, IRON, STEEL and Iron Pipe, Pipe Fittings, Steel Wire, Cap Screws, Stovepipe Elbows, Bronze Bars, Rabbitt Metal, White Brass, Sheet Brass, Sheet and Bar Copper, Copper Tubing, Brass Tubing, Brass Clean-outs, Lead Pipe, Sheet Lead, Sheet Zinc, Solder, Spades, Portable Forges, Screw Eyes, Window Glass, Rubber Tires, Manila Rope, Cotton Waste, Towels, Chamolli Skins, Soap, Soap Polish, Candles, Lye, Litharge, White Lead, White Zinc, Linseed Oil, Alcohol and Paints.** Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. April 7, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 908) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

## BOND OFFERINGS

### Bond Sale Notice

Copiah County, Mississippi, Supervisors' District Number Five, 6 per cent. Road Bonds, \$25,000 of a \$150,000 issue to be sold on May 1, 1915. Submit all bids and communications to B. Shelton, Clerk of Road Commissioners of District No. Five, Hazlehurst, Miss.

### Town Bonds

Elm City, N. C., has \$7000 20-year 6 per cent. coupon bonds for sale. The undersigned will receive sealed bids for same until 2 o'clock P. M. April 7, 1915, and will gladly furnish full particulars about this issue.

CLARENCE WINSTEAD, Clerk,  
Elm City, N. C.

### For Sale—\$25,000 City of Union (S. C.) Water-Works Improvement Bonds

Sealed bids will be received and opened by the City Council of Union, S. C., up till noon March 31, 1915, for the purchase of twenty-five thousand dollars of City of Union, S. C., "Water-works Improvement Bonds." Interest coupons payable semi-annually at a rate not exceeding 6 per cent. In denominations to suit the purchaser. Life of bonds forty years, with the privilege of redemption in twenty years, 20-40s.

All bids must be accompanied by a certified check of five hundred dollars—2 per cent. The right is reserved to accept or reject any or all bids.

By order of the City Council.  
W. D. ARTHUR,  
Clerk and Treasurer.  
Union, S. C., March 4, 1915.

### Notice To Bondholders

#### SEAWALL BONDS.

Bids will be received by the undersigned until 11 A. M. April 5, 1915, for the sale to the County of Galveston, Texas, of 4 per cent. seawall and breakwater bonds in amounts up to \$42,000. Bidders will please state in their bids the rate at which they will deliver the bonds at Galveston, and with or without the April coupon. The County Commissioners' Court reserves the right to reject any and all bids, and if any bid is satisfactory the successful bidder will be advised by wire.

JOHN M. MURCH,  
County Auditor.  
Galveston, Tex., March 15, 1915.

### \$23,000 Water and Sewerage Bonds

#### Clinton, N. C.

The town of Clinton, N. C., will receive sealed bids until Tuesday, April 27, 1915, at 2 o'clock P. M. for its issue of \$23,000 5 per cent. 30-year bonds dated January 1, 1915.

These bonds are in denomination of \$500 each and interest payable semi-annually, and are without option of prior payment.

No bids will be considered for less than par and accrued interest, and unless accompanied by a certified check for \$500 as evidence of good faith.

The city reserves the right to reject any and all bids.

This March 22, 1915.  
A. B. CRUMPLER, Mayor.  
H. A. JAMES, Clerk.

## PROPOSAL ADVERTISING INFORMATION

**RATE:** 20 cents per line per insertion.

**PUBLICATION DAY:** Thursday.

**FORMS CLOSE 9 A. M. Wednesday.** Copy received later cannot be published until issue of following week.

**NIGHT LETTER:** When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

### THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

### \$25,000 4½% Bonds

Bids will be received until 12 M. Saturday, April 3, 1915, for \$25,000 4½ per cent. twenty-year Union County Bonds. Interest payable semi-annually. Certified check for \$500 to accompany bid.

Board County Commissioners reserve right to reject any and all bids.

J. T. JETER, County Supervisor,  
Union, South Carolina.

### Notice of Bond Sale

Dallas, N. C.

Sealed bids will be received by the town of Dallas, N. C., until 6 P. M. Tuesday, April 6, 1915, for \$10,000 6 per cent. 30-year funding bonds.

Certified check of a national bank for 5 per cent. of bid to be enclosed. The right to reject any or all bids is reserved. No other indebtedness of the town. Assessed valuation of property is \$360,000. For further information address

DR. S. A. WILKINS,  
City Treasurer.

### \$100,000 Blount County (Tennessee) 5% Pike Bond Sale

Maryville, Tenn.

Sealed bids will be received at the Court House in Maryville, Tennessee, until 1 o'clock P. M. April 6, 1915, for the purchase of \$100,000 of an issue of \$300,000 of 5 per cent. Pike Bonds. Certified bank check for 2 per cent. of the amount of bonds bid for, made payable to the Trustee of Blount County, must accompany each proposal. The right to reject any or all bids is reserved. Interest payable semi-annually, January 1 and July 1. Bonds due, \$10,000 in ten and fifteen years, \$20,000 in twenty, twenty-five, thirty and thirty-five years. Bonds to be in denomination of \$500 and \$1000; dated April 15, 1915. Coupons and bonds payable in New York.

The above bonds are sold under the General Enabling Act of 1913, Chapter 26.

R. P. McREYNOLDS,  
Chairman C. Court.

### Bids Wanted for Municipal Bonds

Bids will be received by the Mayor and Council of the City of Rome, Georgia, until noon on March 29, 1915, for the purchase of \$75,000 of municipal building bonds issued by said city, to bear date April 1, 1915, due \$5000 on April 1, 1925, and \$5000 annually thereafter, bearing interest from date of issue at 4 per cent. per annum, said interest payable semi-annually on October 1 and April 1.

Said bids to be filed in the office of the Clerk of Council, Rome, Ga. The Mayor and Council reserve the right to reject any or all bids. All bidders must accompany their bids with a certified check for \$500.

This March 18, 1915.

J. D. HANKS, Mayor;

HUGH McCRARY, Clerk of Council,  
Rome, Ga.

### Sale of Bonds

The town of Smithfield, North Carolina, invites sealed bids for \$12,000 six per cent. coupon bonds, due and payable thirty years from date of issue, with option of taking up and paying said bonds or any part thereof at any time after five years from date of issue. Denomination of bonds, \$500; interest payable semi-annually, principal and interest to be payable at such place as the purchasers may elect. All bids must be in the hands of the Mayor of said town on or before Saturday, April 10, at 12 o'clock M. No bid will be considered unless accompanied by certified check for \$250. The right to reject any and all bids is reserved. Purchasers furnish blank bonds at their own expense.

These bonds are issued for the purpose of funding indebtedness incurred in the completion of water-works, electric-light plant and sewer system of said town, and are authorized by special act of the General Assembly of 1915.

Address all proposals to Jas. A. Wellons, Mayor, Smithfield, N. C.  
This March 17, 1915.

### Vivian (La.) Water-Works Bonds For Sale

\$35,000 in 5 per cent. serial bonds, maturing in 30 years. Issued for the construction of a water-works system for the Town of Vivian, La. Sealed bids with certified check for \$500 will be received until 3 o'clock P. M. April 16, 1915. Rights reserved to reject any and all bids.

For further information address  
J. D. HOUSTON, Clerk.

## PAVING AND GOOD ROADS

### Road Grading and Paving

Charleston, W. Va.

Notice is hereby given that the County Court of Kanawha County, West Virginia, will receive sealed bids until 11 o'clock A. M. Saturday, April 3d, 1915, at the County Court room in the Courthouse of said county, for the grading and paving the following described roads, in the different districts, as follows: In Union District—Beginning at the north end of the Warrenton road, on the Charleston and Sissinville pike, thence following the right of way of the same, as near as practicable, a distance of three miles, and beginning at the Charleston and Union District line near Lock Six on the Charleston and Point Pleasant pike, thence following the right of way of said pike a distance of one-half mile.

In Charleston District—Beginning at the North end of the Warrenton road below the two-mile stone bridge on the Charleston and Point Pleasant pike, thence along the right of way of said pike and down the Kanawha river a distance of about two and one-third miles to the Charleston and Union District line, and beginning at the Charleston corporation line on the north side of Kanawha river at the upper end of said city, thence up the pike a distance of about seven-tenths of a mile to the Charleston and Malden District line. The last-named piece of road to be paved only.

In Malden District—Beginning at the Charleston and Malden District line on the pike on the north side of Kanawha river, thence up and along said pike a distance of three and three-tenths miles to a point in the town of Malden. This piece of road is to be paved only.

In Loudon District—Beginning at the approach to the South Charleston bridge, thence following the direction of the Charleston traction line down Kanawha river about three and one-third miles to the Loudon and Jefferson District line. Beginning at the Charleston corporation line on the south side of Kanawha river on the pike, thence up the same a distance of three miles. This work is to include all necessary drains, culverts, bridges and ditches.

Plans, profiles and specifications for said work are on file at the County Road Engineer's office at the Courthouse of said county, where they may be seen and inspected.

The said Court reserves the right to reject any or all bids.

The County Court of Kanawha County:  
By M. P. MALCOLM, President.  
F. G. BURDETT,  
County Road Engineer  
of Kanawha County.

### Traction Engines and Graders

Sealed proposals will be received by the undersigned for the City Council of the City of Columbia, South Carolina, until 10 A. M. Tuesday, April 6, 1915, for furnishing for the City of Columbia either a 20-horse-power Double-Cylinder Steam Traction Engine or a 20-40-horse-power or a 40-60-horse-power Gasoline or Oil Traction Engine, and also a Horse or Tractor Road Grading Machine. Bidders must submit complete plans and specifications covering full details for both tractors and graders and submit a price f. o. b. Columbia, South Carolina, together with the guaranteed date of delivery.

The right to reject any or all bids is reserved by the City Council.

JOHN MCNEAL,  
City Engineer.  
R. C. KEENAN,  
Councilman-Supt. Street Department.  
Columbia, S. C., March 16, 1915.

## Highway Construction

### NOTICE TO CONTRACTORS.

Marshall, Texas.

The Commissioners' Court of Harrison County, Texas, will receive up to 2 o'clock P. M. on April 6, 1915, in the city of Marshall, Texas, sealed bids for the construction of approximately twenty miles of graded and macadam highway in Road District No. 1 of Harrison county. Plans may be examined in office of N. P. Turner, highway engineer, Marshall, Texas, and specifications may be procured after March 15 by applying to the engineer. The right is reserved to reject any or all bids.

## Road Construction, Lake County, Florida

Tavares, Fla.

Sealed proposals will be received by the Board of County Commissioners of Lake County, Florida, at the office of the County Clerk in the Court House at Tavares, Florida, for the construction of a System of Roadways in Lake County, until Thursday, April 15, at 12 noon, 1915, at which time they will be opened and read publicly. The work includes the furnishing of all labor, material and machinery, and equipment of every kind necessary to construct the roadways according to plans and specifications. The approximate quantities are as follows:

1,091.046 lin. ft. roadway.  
329,630 cu. yds. excavation.  
1,147,619 sq. yds. pavement.  
301.62 cu. yds. concrete.  
1,554 lbs. square deformed steel.  
5,146 lbs. R. C. steel.  
65 feet 24" drains.  
125 feet 18" drains.  
435 feet 15" drains.  
280 feet 12" drains.  
1,552 feet pole line to be moved.  
57 bridges to be raised.

Bids are asked on the following surfacing for roads: Sand-clay, shell, modified asphalt, plain macadam water-bound, macadam with "Hoe-Mac" binder, macadam graded. The type of surfacing to be used for different roads will be determined after bids are in.

Each bid must be accompanied by a certified check on a National Bank for 5 per cent. of the amount bid or an approved bid bond issued by a Surety Company authorized to do business in Florida, drawn to the order of the County Clerk, H. H. Duncan.

Plans and specifications may be seen at the office of the County Clerk or the Engineers. Specifications may be obtained from the County Clerk or the Engineers. Copies of plans may be obtained from the Engineers at \$25 per set to cover their actual cost.

The desire of the Board is to let the contract in as large sections as possible. The right is reserved to reject any or all bids.

J. H. COMPTON, Chairman,  
H. H. DUNCAN, Clerk.  
THE J. B. MCCRARY CO., Engineers,  
1403-17 Third National Bank Building,  
Atlanta, Ga.

## State Highway

STATE OF MARYLAND.  
STATE ROADS COMMISSION.  
601 Garrett Bldg.,  
Baltimore, Md.

### NOTICE TO CONTRACTORS.

Sealed proposals for building State Highway, aggregating about 6.18 miles in length, as follows:

Contract No. AB-8, BALTIMORE CITY: Sections of Maryland Avenue; Russell, Bush and Ridgely Streets from Western Maryland Railroad tracks to the B. & O. Railroad crossing, about 0.83 mile in length. (Brick, Sheet Asphalt and Granite Block.)

Contract No. BC-3A, BALTIMORE CITY: One section of Frederick Avenue over Gwynns Falls Bridge, about 0.24 mile in length. (Vitrified Brick Paving.)

Contract No. 0162B, GARRETT COUNTY: One section of road from Thayersville towards McHenry, about 3.73 miles in length. (Resurfacing.)

Contract No. CE-18, CECIL COUNTY: One section of road through Elkton from Little Elk Bridge to the first cross-road in Elkton and from Pennsylvania Crossing to Big Elk Bridge, about 1.33 miles in length. (Concrete or Macadam.)

Will be received by the State Roads Commission at its offices, 601 Garrett Building, Baltimore, Md., until 12 M. on the 13th day of April, 1915, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications. Specifications and plans will be furnished by the Commission upon application and cash payment of \$1 for each contract, as hereafter no charges will be permitted.

No bid will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission, this 22d day of March, 1915.

WM. L. MARCY,  
Secretary.  
O. E. WELER,  
Chairman.



# PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

## Paving Brick

Sealed bids will be received by the City of Sanford, Florida, for No. 1 paving brick to pave 3100 sq. yds. Same to be opened April 19, 1915, at 8 P. M.

Specifications and blank forms of proposal can be obtained of the City Clerk.

Payment to be made with City Vouchers due in one, two and three years, with interest at 6 per cent.

City reserves the right to reject any or all bids.

M. W. LOVELL, City Clerk.  
FRED T. WILLIAMS, City Engr.

## Notice to Road Contractors

Sealed bids will be received at the office of the United States Highway Engineer in the Western Carolina Bank Building at Aiken, South Carolina, until 10 A. M. Friday, April 2, 1915, by the Board of County Commissioners of Aiken County, South Carolina, for improving by grading and surfacing with sand clay that portion of the South Carolina Post Road extending from the corporate limits of the City of Aiken to the Aiken-Edgefield county line, a distance of eleven and one-half (11½) miles.

Following are the approximate quantities: 27,500 cubic yards excavation. 18,000 cubic yards sand-clay surfacing. Cash payments amounting to ninety (90) per cent. of the Engineer's estimate will be made monthly. The proposed work must be completed by October 1, 1915.

Plans may be seen and specifications and forms for proposals secured at the above Engineer's office. A certified check for Five Hundred Dollars (\$500) must accompany the proposals. The Board of County Commissioners reserves the right to reject any or all bids.

JOHN STAUBES,  
Chief Commissioner,  
Aiken County, South Carolina.

## Notice to Bidders for Street Paving

Cumberland, Md.

Sealed proposals, addressed to the Mayor and City Council of Cumberland, Md., will be received at the Office of the City Clerk, City Hall, endorsed "Proposals for Grading, Curbing, Paving and Otherwise Improving Streets Under Cumberland City Paving Bonds," on or before 9:30 A. M. Monday, April 5, 1915.

There are sixteen (16) streets to be paved with Brick on Concrete Base, approximately there will be 57,000 square yards, requiring about two and a half million bricks.

Bids may be made for the whole number of streets or for each street separately, to suit bidders.

Plans and specifications can be procured at the Office of the City Engineer, for which \$1 per street will be charged, to be refunded on return of plans in good order. A certified check for \$50 must accompany bid on each street, to be returned after award of successful bidder is announced.

Bids must be in the hands of the City Clerk at the City Hall, Cumberland, Maryland, not later than 9:30 A. M. April 5; at such time and place said bids will be opened.

The Mayor and City Council of Cumberland reserve the right to reject any and all bids.

JAMES P. GAFFNEY,  
City Engineer.

## Paving

OFFICE OF THE PAVING COMMISSION, Baltimore, Maryland.

Separate sealed proposals, executed in duplicate, addressed to the Board of Awards, care of the City Register, will be received by him at his office in the City Hall until 11 A. M. Wednesday, March 31, 1915, to grade, curb and pave with Wood Block and Granite Block, all on a concrete base, the street listed in the following contract:

Wood Block Paving and Granite Block Paving Contract No. 113.

From	To	South St.
German St.	Eutaw St.	1,700 square yards
Wood Block		1,000 square yards
Granite Block		1,210 square yards
Certified Check		\$1,300

The figures above represent the approximate quantities of the principal items appearing in the contract.

Specifications and proposal sheets can be obtained upon application to the office of the Paving Commission, City Hall. A deposit of \$5 will be required for a specification covering each contract. This will not be refunded unless a bid is filed.

Plans and profiles are on file for the information of bidders in the office of the Consulting Engineer.

The Board of Awards reserves the right to reject any and all bids. A certified check of the bidder on a clearing-house bank, drawn to the order of the Mayor and City Council of Baltimore to the amount as recited above, must accompany each bid.

The successful bidder will be required to furnish bond and to comply with the City Charter respecting contract.

By order of the Paving Commission.  
R. KEITH COMPTON,  
Chairman and Consulting Engineer.  
J. MYERS HEDIAN,  
Secretary.

Approved:  
JOHN HUBERT,  
Acting Pres. Board of Awards.

## WATERWORKS AND SEWERS

### Concrete Sewer

Richmond, Va., March 22, 1915.

Sealed proposals will be received at this office until 12 o'clock noon April 2, 1915, for the construction of a section of the Bacon Quarter Branch Sewer of reinforced concrete, for a distance of about 1150 feet, extending from the west line of 2d Street to Station 100 + 75.

Specifications, plans and forms of proposals can be obtained at this office upon application.

Bidders are required to examine the location and determine for themselves the difficulties of the construction of this sewer.

A certified check for \$1000, made payable to the City Treasurer, must accompany each bid as a guaranty of executing contract.

The Administrative Board reserves the right to reject any and all bids.

CHAS. E. ROLLING,  
City Engineer.

### Sanitary Sewers at Clinton, N. C.

Sealed proposals for a system of Sanitary Sewers in the Town of Clinton, N. C., will be received by the Mayor and Commissioners until 2 o'clock P. M. Wednesday, April 23, 1915.

The work will consist of approximately 5½ miles of vitrified-pipe sewers from 8 inches to 12 inches in diameter, to be constructed in accordance with the plans and specifications on file in the office of the Mayor.

Blank forms of proposal, specifications, etc., may be obtained from the Engineer.

Certified check for 5 per cent. of the bid must accompany each proposal.

The right is reserved to reject any or all bids.

A. B. CRUMPLER, Mayor.  
H. A. JAMES, Clerk.

Engineer:  
WILLIAM M. PIATT,  
Durham, N. C.

## Water-Works System

East New Market, Md.

Sealed proposals for the construction of a Water-works System will be received at the office of the Board of Town Commissioners of the Town of East New Market, Maryland, at 12 o'clock noon on the fifteenth day of April, 1915.

The work to be done comprises the furnishing and laying of about 1200 feet of four and six-inch water mains, five fire hydrants, concrete receiving basin, pumping station, and tank and tower and all necessary appurtenances.

Contract, proposal form and plans may be seen at the office of the Secretary of the Commissioners or at the office of the Engineers. Plans may be obtained on the payment of \$2.50 for each set.

Each proposal for the work must be accompanied by a certified check drawn upon a national or State bank or trust company and to the order of the Board of Town Commissioners of East New Market for the sum of \$250.

F. E. LOOMIS,  
Secretary.

KASTENHUBER & ANDERSON,  
Engineers,  
Easton, Maryland.

## Waterworks and Sewer Material

Jefferson, Ga.

Sealed bids on Water-works and Sewer material and equipment will be received by the City of Jefferson, Ga., not later than 6 P. M. on Monday, April 19, 1915. The following is an approximate list of quantities:

150 tons 6 and 8-inch C. I. Pipe, Class B.
6 tons C. I. Specials.
25 6-inch 2-way Hydrants.
10 6 and 8-inch Gate Valves.
1 15-ft. x 50-ft. Standpipe.
250 bbls. Portland Cement.
11,000 lin. ft. 1½-inch Galv. Service Pipe and Fittings.
11,000 lin. ft. 8-inch Vit. Sewer Pipe and Fittings.
2100 lin. ft. 10-inch. Vit. Sewer Pipe and Fittings.
5 5-inch P. F. T. Siphons.
15,000 lbs. C. I. Manhole Covers.
50,000 Bricks.
Crushed Stone for Concrete.
Clean Sand.
Lumber.
1 12-ft. Gravity Filter and Agitator.
1 24-ft. Subsidence Tank.
2 Chemical Tanks.
All necessary Hydraulic and Mechanical Equipment and Appurtenances.
1 50 H. P. Gasoline Engine.
1 37½ K. W. Belted Generator, 3-phase, 60-cycle, 240 volts.
1 Switchboard Panel and Appurtenances.
1 350 G. P. M. Motor-Driven Centrif. Pump, 50-ft. head.
1 350 G. P. M. Motor-Driven Centrif. Pump, 250-ft. head.

Bids will be received on any or all of the above material f. o. b. Jefferson, Ga. The city reserves the right to reject any and all bids.

J. N. HOLDER,  
Mayor.

HOMER HANCOCK,  
City Clerk.

SOLOMON-NORCROSS CO., Engineers,  
Atlanta, Ga.

## Vivian (La.) Water-Works System

Sealed proposals will be received by the Mayor and Town Council of Vivian, La., until 3 o'clock P. M. April 16, 1915, for furnishing all material and constructing a system of water-works in said town.

Plans and specifications may be seen at the office of the Clerk or furnished by Edward W. Gantt Company, Dallas, Texas.

A certified check for \$3000 must accompany each bid.

J. D. HOUSTON, Clerk.

## Union (S. C.) Water-Works Construction Material

Sealed proposals will be received by the Commissioners of Public Works at their office, 17 West Main St., Union, S. C., for furnishing material and machinery f. o. b. cars Union, S. C., for water-works extension, until 11 A. M. March 30, 1915, at which time they shall be opened and read publicly. The approximate quantities are as follows:

21,130' 8" cast-iron pipe.
1,900' 6" cast-iron pipe.
2,000' 4" cast-iron pipe.
24,000 pounds original pig lead.
1,000 pounds No. 8 copper wire.
12,000 pounds cast-iron specials.
4 8" H. E. gate valves and boxes.
8 4" double-nozzle hydrants.
1 400 G. P. M. centrifugal pump.
160 35' 8" top cyress poles.
160 24" Bo-Arrow arms with pins and bolts.
500 6600-volt porcelain insulators.
6 20 K. W. 6600-2200-volt transformers.
1 75 H. P. induction motor.
3,500 pounds No. 8 copper wire.

Each bid must be accompanied by a certified check for five per cent. (5%) of amount bid, drawn to the order of W. H. Sartor, Chairman, which will be forfeited upon failure by bidder to enter into contract and furnish the necessary bond. Each bid must be addressed to R. A. Easterling, Engineer, care Commissioners of Public Works, Union, S. C.

The Commissioners reserve the right to reject any or all bids or portions of bids, to waive defects or to accept any bid.

Specifications may be obtained from the Engineer at Union, S. C., upon payment of five dollars to insure their return within ten days after letting.

R. A. EASTERLING,  
Engineer.

W. H. SARTOR,  
Chairman.

## Durham Water-Works Improvements

Sealed proposals will be received by the Mayor and Board of Aldermen of the City of Durham, N. C., at the City Hall until 3 P. M. April 21, 1915, for "Water-Works Improvements," consisting of:

River Pumping Station, City Pumping Station, Filter-House and Concrete Clear Water Well, Coagulating Basin, Filter Equipment for four units of ¼ million gallons each, laying nine miles 20-inch cast-iron pipe, two Radial Brick Chimneys.

Proposals must be marked "Proposals for Water-Works Improvements."

All proposals must be upon blank forms provided in Proposal and Contract.

Each proposal must be accompanied by a certified check for not less than 5 per cent. of the amount of the bid as an evidence of good faith.

Specifications, Proposal and Contract forms and plans will be mailed upon application to the Engineer at Charlotte, N. C., when accompanied by the payment of Twenty-five Dollars to insure their return in good condition within thirty days after the date set for receiving proposals.

The right is reserved to reject any or all proposals.

W. J. BROGDEN, Mayor.  
GEO. W. WOODWARD, Clerk.

GILBERT C. WHITE,  
Charlotte, N. C.

## MISCELLANEOUS

### Electric Lights Wanted

Guntersville, Ala.

The town of Guntersville, Ala., contemplates putting in a system of electric lights within the next few months, and the Town Council of said town is now open for propositions from anyone who will put in the lights.

D. ISBELL,  
Mayor.

## Corrugated Iron Culverts

Bids will be received by the Board of County Commissioners of Pinellas County, Florida, at Clearwater, Fla., April 6, 1915, for following sizes of corrugated iron culverts:

40 ft. 72-in., 10 gauge.
36 ft. 48-in., 12 gauge.
72 ft. 36-in., 14 gauge.
300 ft. 24-in., 15 gauge.
300 ft. 18-in., 16 gauge.
300 ft. 15-in., 16 gauge.
200 ft. 12-in., 16 gauge.
108 ft. 15-in. ¼-round, 16 gauge.

All bidders will be required to show samples of two-ft. lengths or over. The Board reserves the right to reject any or all bids.

CLEMENTS McMULLEN,  
County Highway Engineer.

## Opera Chairs

Bids will be received by W. H. Carr, Leesburg, Fla., for—

462 Opera Chairs, 20"	Floor incline 1" to 1 foot.
26 Opera Chairs, 19"	1 foot.
16 Opera Chairs, 18"	Floor incline 1½" to 1 foot.
224 Opera Chairs, 20"	1 foot.

Bids must be low and all material fully guaranteed and delivered to Leesburg, Fla. Bids will be opened April 5 at Tavares, Fla.

W. H. CARR, Architect.

## Electric-Light Improvements, Kinston, N. C.

Sealed proposals will be received until 5 P. M. of April 6, 1915, by the Mayor and City Council of Kinston, N. C., for Electric-Light-Plant Improvements.

New equipment includes 300 K. W. engine type generators, two belted generators, switchboard, 450 H. P. four-valve engine, condenser, centrifugal pump and motor, return tubular boilers. Bids on alternates to the above will be considered.

Building construction consists of extension to existing structures, station for centrifugal pumps, and about 1000 feet of terra-cotta and cast-iron pipe line.

Each proposal must be accompanied by a certified check for not less than five per cent. of the amount of the proposal.

All proposals must be upon forms provided by the city.

The right is reserved to reject any or all bids.

Specifications, proposal form and plans will be on file in the office of the City Clerk at Kinston, N. C., and may be obtained from the office of the Consulting Engineer in Charlotte, N. C., upon application, accompanied by payment of five dollars, which will be refunded when specifications and plans are returned in good condition within thirty days after the date of receiving proposals.

FRED I. SUTTON, Mayor.

W. B. COLEMAN, Clerk.

Consulting Engineer:  
GILBERT C. WHITE,  
Charlotte, N. C.

## Hydraulic Dredge

City of Lynn Haven, Fla.

Sealed proposals for the furnishing of a Hydraulic Dredge, either new or second-hand in good condition, together with the necessary discharge pipe and other appurtenances for use in dock construction and other improvements, will be received by the City Council of the City of Lynn Haven, Florida, up to 12 o'clock noon of April 15, 1915.

Bidders are invited to submit proposals for either an eight (8) inch or a ten (10) inch dredge, delivered at Lynn Haven, Florida, steam or gasoline power, on a design of their own, together with complete and detailed specifications and plans therefor if for a new plant, or a complete description and list of pipe, etc., if second-hand, stating time of delivery.

The dredge will be used in salt water. Maximum length of discharge, 500 feet; maximum height of discharge, 15 feet.

No proposal will be considered unless accompanied by a guaranty satisfactory to the City Council.

The right is reserved to reject any or all bids (also the right to award a contract upon terms and in the manner deemed most advantageous to the city).

Bids should be placed in a sealed envelope marked "Proposal for Dredge," to be opened April 15, 1915," and addressed to R. W. Beach, Sr., City Clerk, Lynn Haven, Florida.

By order of the City Council.  
Dated March 15, 1915.

E. H. WILBUR,  
City Engineer.

Attest:  
R. W. BEACH,  
City Clerk.

## Pumping Station Equipment

Sealed proposals will be received by the Mayor and Board of Aldermen of the City of Durham, N. C., at the City Hall until 3 P. M. April 21, 1915, for "Pumping Station Equipment," consisting of three-million-gallon Crank and Flywheel Pumping Engines, Turbine-driven Centrifugal Pumps, Feed Pumps, Open-Feed Water Heaters, 5 K. W. and ¼ K. W. D. C. Electric Lighting Units, Manning Boilers.

Proposals must be marked "Proposal for Pumping Station Equipment."

All proposals must be upon blank forms provided in Proposal and Contract.

Each proposal must be accompanied by a certified check for not less than 5 per cent. of the amount of the bid as an evidence of good faith.

Specifications, Contract and Proposal forms will be mailed upon application to the Engineer at Charlotte, N. C., when accompanied by payment of Ten Dollars to insure their return in good condition within thirty days after the date of receiving proposals.

The right is reserved to reject any or all proposals or to consider proposals on alternate equipment.

W. J. BROGDEN, Mayor.

GEO. W. WOODWARD, Clerk.

Engineer:  
GILBERT C. WHITE,  
Charlotte, N. C.



# Barrett's PAVING PITCH



Irving Park Boulevard, Chicago, Ill. Brick and Granite Pavement filled with Barrett's Paving Pitch.

## The Seal of Superiority

**A** FILLER that seals the pavement both winter and summer, so that water and frost cannot attack the foundation, is absolutely essential.

Only one filler can be relied upon to maintain a perfect bond for all seasons, and that is a *reliable paving pitch*.

Brick shrinks away from asphalt in cold weather, causing cracks between the blocks.

Cement does not allow for expansion in hot weather, and cracks and "blow-outs" result.

Good paving pitch has none of these faults. With it street repairs can be easily, quickly and economically made. It will outlast the pavement itself—and the initial cost is low.

Not all pitch is reliable—don't take chances—use a proved pitch, made especially for the purpose. Barrett's is just that.

*Illustrated booklet free on request.*

### BARRETT MANUFACTURING COMPANY

New York  
Pittsburgh

Chicago  
Detroit

Philadelphia  
Birmingham

Boston  
Kansas City

St. Louis  
Minneapolis

Cleveland  
Salt Lake City

Cincinnati  
Seattle



## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Water-works for Sale.

Real and personal property, rights, privileges and franchises of the Morrilton Water-works Co. of Morrilton, Ark., will be offered for sale May 22, 1915, by M. H. Dean, Commissioner in Chancery, Morrilton, Ark. For terms of sale and other particulars address Mr. Dean.

### Architects and Engineers.

Victor Grimmer and Henry J. Toussaint, Citizens' National Bank Bldg., Tampa, Fla., have formed a partnership for the practice of architecture and engineering in all its branches, including designing, estimating, supervision, examination, surveying, etc. Manufacturers' samples and catalogues will be gladly accepted by the firm.

### Uniform Asphalt Distributor Co.

Organization of the Uniform Asphalt Distributor Co. of Meridian, Miss., to conduct a general contracting business in the construction and surfacing of highways with bituminous products is announced. Bituminous distributors, especially designed to handle the heaviest grades of liquid asphalt, will be used by the company in applying asphalt under its "Uniform Method."

### Represents Standard Oil Co.

J. S. Helm, 1331 Healey Bldg., Atlanta, Ga., has severed connections with John Baker, Jr., of Chicago, and will in future represent the Standard Oil Co. of Newark, N. J. Standard paving asphalt, made from Mexican asphaltic petroleum, also road oils, fluxes, macadam binders, brick and wood-block fillers, and a high-grade California paving asphalt will be handled by Mr. Helm.

### Appoints General Manager.

The Appraisal Company of the South, appraisals and insurance engineering, with general offices at Savannah, Ga., announces the appointment of W. S. Rankin as general manager. Mr. Rankin is especially fitted for the position of manager by his many years of experience in insurance engineering, appraising and fire-loss adjustment. Organization and description of the field of operation of the Appraisal Company of the South was reported in the Manufacturers Record several months ago.

### New Mazda Lamps of Downward Lighting Type.

Concentrated filament Mazda lamps of high wattages have proven so popular that the Edison Lamp Works of the General Electric Co. of Schenectady, N. Y., has developed vacuum Mazda lamps in the 25, 40 and 60-watt sizes, which are said to be designed to give greater downward distribution of useful light than is possible with the regular Mazda lamps of corresponding wattages. These lamps will be made in the same size bulbs as the regular standard Mazda

lamps and are claimed to have a rated average life of 600 hours. Their brilliant light source and greatly increased downward distribution of light make them especially adaptable to installations where brilliancy is the chief requisite.

### "Anti-Flame" Fireproofing Compound

By saturating silks, velvet, paper, mattresses, curtains, cotton in bales, office furniture, woodwork, etc., with a fluid preparation invented by L. L. Wolf and compounded by the Edwards Manufacturing Co. of Cincinnati, O., such materials are claimed to be rendered flameproof, and the compound is also said to stand the supreme test of a blowpipe or torch flame without the articles being ignited. "Anti-Flame" fireproofing compound is said to be adapted for fireproofing everything from a lace curtain to a hardwood floor. It is easily and quickly applied, has no odor, and is claimed not to spot nor affect the colors. "Anti-Flame" wood compound for office furniture and fixtures is prepared in any desired color, and can be applied with a brush the same as ordinary paint. A folder illustrating and describing Wolf's "Anti-Flame" fireproofing compound is issued by the Edwards Manufacturing Co., and will be sent to interested persons upon request to the company.

### Removal of Manufacturing Plant.

To obtain better facilities for handling its newly created export trade the International Tool Co. decided to move its plant from Detroit, Mich., to Newport News, Va., where the company secured part of the land purchased by the city of Newport News for the use of various industries which might locate there. The company was inaugurated four years ago for the manufacture of horticultural specialties. The line of high-class pruning shears, tinners' snips etc., manufactured is said to be well known and the company's trade is well established in the horticultural sections of the United States. About a year ago effort was put forth to secure business in its line in the Cocoa sections of the West Indies and South America, where exceptional success, considering the time its goods have been in the market, is reported to have been achieved by the company.

### One Way of Solving Employment Problem.

Notwithstanding the general business depression during the past fall and winter, the Broderick & Bascom Rope Co., 905 N. Main St., St. Louis, Mo., manufacturer of Yellow Strand Powersteel wire rope, adopted the policy of giving employment to all its force, including day and night shifts, even if only part time, rather than to work half of the force full time. From last spring until early fall the company reports operating its plant three-fourths time, employing

the entire force day and night. During part of October and all of November, still keeping all the men employed, the plant was in operation one-half time. Finally, in furtherance of its policy to keep all employees working, even if only part time, the plant was operated full time during December, so that the men might have some extra money for Christmas, even though this meant piling up large stocks of wire rope, resulting in increased expense. With improving conditions, the company reports the matter of employment, time, etc., is working itself out naturally.

### Leather Belting Exhibit.

In the Machinery Palace of the Panama-Pacific Exposition at San Francisco is shown a unique and interesting leather-belt exhibit by Chas. A. Schieren Company, 30-38 Ferry St., New York, manufacturer and tanner of Duxbak and Oak Bark tanned leather belting. This exhibit, as shown in the accompany illustration, which represents a view of the booth at night, contains unusual and in most cases entirely new drives run with leather belting, including the ordinary vertical, horizontal, straight and right-angle drives, the power being



SCHIEREN LEATHER BELTING BOOTH AT PANAMA-PACIFIC EXPOSITION.

transmitted through shafting, friction clutches, etc., by an electric motor attached to one of the four columns supporting the octagon-shaped roof or dome, on which rests a Schieren belt, 190 feet long, arranged in a spiral. Connected with the fountain in the center of the booth is a small centrifugal pump which forces a stream of water up through the basin. Illustrating the waterproofness of its belting, a duck, representing the trade-mark of the firm, is fastened to a belt which runs permanently in the water of the fountain. Further demonstrating the application of Schieren belting to interesting and unusual drives, many machines are operated in and around the booth.

### Activities of the Institute of Industrial Research.

Since the comparatively recent organization of the Institute of Industrial Research at Washington, D. C., which was incorporated to carry on research work in industrial development upon the broadest pos-

sible lines, many scientific and other problems confronting the manufacturing and commercial interests of the country are said to have been solved. In its various departments the entire field of applied chemistry is covered, and a newly developed or improved process can be carried from an experimental stage in the laboratory to a full commercial application. Work is also performed for corporations and individual firms in all branches of manufacture, plants are designed and erected, utilization of waste products worked out, processes and methods studied and improved, specifications supplied for the purchase of raw materials, and finished products are standardized. The institute's field of operation as outlined will especially recommend it to associations of manufacturers in particular lines of industry for handling problems common to the industry as a whole, wherein results obtained would contribute to the advancement of the entire body. The scope and personnel of the institute, as set forth in a booklet distributed free by it, is as follows: Division of metallurgy, Allerton S. Cushman, A.M., Ph.D., who is the director of the institute and president of the board of trustees, was formerly assistant director of the United States office of public roads in the Department of Agriculture; division of paint technology, Henry A. Gardner, assistant director and vice-president of the board of trustees; division of foods and agricultural chemistry, Charles A. Cramp-ton, M.D., Ph.D.; division of drugs, Henry C. Fuller, B.S.; division of roads and pavements and materials of construction, Prevost Hubbard; division of electrical engineering, physics and electrochemistry, Nevil Monroe Hopkins, M.S., Ph.D., and division of mill problems, George W. Coggeshall, Ph.D. The institute is not connected with the Government, although several of the members of its staff have served in various departments of the Government and co-operate with it in certain lines of research.

### TRADE LITERATURE

#### Dixon's Graphite Productions.

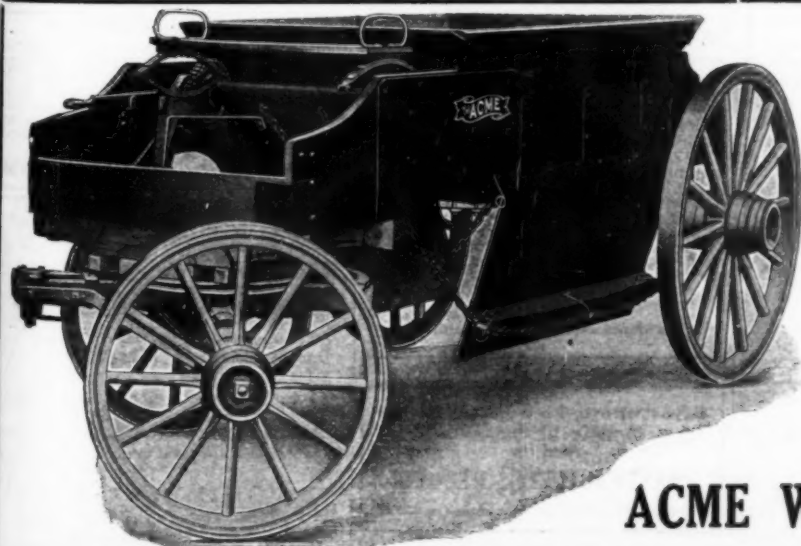
The monthly publication entitled "Graphite," issued by the Joseph Dixon Crucible Co. of Jersey City, N. J., contains in its March number many subjects of interest to users of graphite. Dixon silica-graphite paint, boiler graphite, graphite automobile lubricants and other Dixon products are described, together with editorials and discussions relating to some of the questions of the day.

#### Cooper Gas Engine Installations.

Illustrations of many gas engine installations in the South made by the C. & G. Cooper Company, engine builders, of Mt. Vernon, O., are given in Bulletin No. 54, issued by the company. The company claims this bulletin contains in a few pages a partial review of work done and of results achieved by constructive effort in which many years of engine building experience have played an important part.

#### Lubricating and Tempering Oils.

A folder containing many letters of commendation of Robinson quenching oil, manufactured by the Wm. C. Robinson & Son Co. of Baltimore, is issued by the company, together with a table of prices for calculating the total cost of any number of gallons from 1 to 25, ranging in price from 8 to 25 cents a gallon. Special oils refined by the company



## ADVANTAGES OF Acme Contractors' Wagons

Oak, wrought iron, simple design and careful workmanship are the factors behind the success and reputation of Acme Contractors' Bottom Dumping Wagons.

### A Few ACME Advantages

- (1) Doors overlap each other, making them sand tight; (2) Doors and hinges made practically unbreakable by special method; (3) Stand up under hard usage, easily operated, and lightest running wagon on the market.

Illustrated Catalog on Request

ACME WAGON CO.,

Emigsville, Pa.

include "Autoline" motor oil, "Journal Compound" motor grease and "Greoil," a non-fluid oil for transmission lubrication purposes.

#### "Model" Internal Combustion Engines.

Heavy duty motors for transmission and power plants of pleasure and commercial vehicles, railroad locomotives and farm tractors, and heavy truck and tractor transmissions, are illustrated and described in Bulletin 25, issued by the Pittsburgh Model Engine Co. of Pittsburgh, with New York office in the Produce Exchange Bldg. Other bulletins issued by the company are: No. 26, describing and illustrating Carter piston valve motors; No. 27, Mosul type gasoline motors; No. 28, direct-connected engine generator sets, producing dependable electric light and power units for direct and alternating current and combination storage battery systems for isolated plants, and No. 29 illustrates and describes single cylinder engines using gas, gasoline, kerosene, distillate and low-grade fuels.

#### Structural Steel Towers.

The fifth edition of a catalogue has recently been issued by the Yorke Derrick Co. of Washington, Pa., describing and illustrating structural steel derricks, complete oil and gas drilling rigs and structural steel concreting towers manufactured by the O'Brien Steel Construction Co. of Washington, Pa. General directions for erecting Yorke derricks and complete drilling rigs and directions for erecting and dismantling Yorke steel concreting towers, illustrated with cuts and detail drawings, are given in the catalogue. In connection with steel concreting towers, the company manufactures automatic dump buckets, receiving hoppers and spouting of all kinds for concrete work. Complete oil and gas drilling rigs include rotary, combination rotary and standard types of derricks, bull wheels, band wheels with iron tug pulleys and steel walking beams.

#### Technical Paints for Metal.

For the general guidance of engineers, architects and others, Cheesman & Elliot, technical paint makers, 100 William St., New York, have published the 9th edition of their review of technical paints. Paint specifications for bridges and structural steel, corrugated iron, etc., structural steel to be en-

closed in concrete, etc., galvanized iron, interior walls, ceilings, etc., a review of technical paints including description of causes of paint decay, etc., and much information of value to painters and the painting industry that has been gathered and compiled during years of paint manufacturing experience are contained in this edition. In addition to manufacturing its own special brands of paints the company reports it is equipped to furnish promptly paints made in strict accordance with any specification for any kind of work and that daily shipments of specification paints to railroads and other customers are being made.

#### Window Frame Machinery.

Catalogue No. 15, containing bulletins Nos. 1 to 8, inclusive, issued by The Phillips Manufacturing Co., builder of window-frame machinery, Orlando, Fla., illustrates and describes sash pulley mortisers, pocket cutters, saw-tables machines, special dadoing and special miter machines, saw guards and other patented specialties manufactured by the company. Since a former catalogue was issued by the company, a large number of improvements have been made to several machines. These improvements, together with machines of entirely new design that have been added, are shown in catalogue No. 15. Sash pulley bits, tools and accessories are illustrated and described, and in bulletin No. 8 of the catalogue many strong testimonials as to the worth of Phillips window-frame machinery are given. The company reports a number of foreign shipments of its products have been made recently.

#### Cast-Iron Pipe and Special Castings.

A comprehensive discussion of the use of cast-iron pipe, together with illustrations, descriptive matter, dimensions and weight tables, specifications and complete data that will prove helpful to users of cast-iron pipe, is contained in a 224-page illustrated catalogue issued by the United States Cast Iron Pipe & Foundry Co. of Burlington, N. J. Cast-iron pipe in all regular sizes, 2-inch to 84-inch, bell and spigot, flange, flexible joint, plain end and threaded; special castings and fittings, loam castings, etc., manufactured by the company are given in the catalogue. The tables of dimensions and weights include, in addition to standard bell and spigot pipe and fittings made to the American water-works specifications, a correspond-

ing line of flanged fittings, together with a summary of the new American standards for flanges; also the company's new line of bell and spigot pipe and fittings for high pressure, containing a double groove in both bell and spigot. Complete specifications and standards of the American Gas Institute for both bell and spigot and flanged pipe and specials, with illustrations of miscellaneous large castings and views of the company's works, are also included. A copy of the catalogue will be forwarded to any bona-fide user of pipe or large castings upon application to the Publicity Department, Desk No. 4, United States Cast Iron Pipe & Foundry Co., Burlington, N. J.

#### Symons Disc Crusher.

A disc crusher for rock and other materials patented and owned exclusively by Symons Bros. Co. and Manufactured by Chalmers & Williams, Inc., Chicago Heights, Ill., is illustrated and described in a pamphlet issued by the company. The crusher is said to be economical in repairs and power and produces a uniform material. Crushing is accomplished through two dish-shaped discs of manganese steel, which are set with their hollow or concave sides facing each other, forming a cavity between them. The discs are supported at an angle to each other and both rotate in the same direction at the same speed. When stone is fed through the central feed opening it is thrown by centrifugal force into the opening where the discs are widest apart. It is carried around with them to where they are closer together and is crushed in the operation. The smaller particles fly out from between the discs into the encircling chute, while the larger particles are caught again and the operation repeated. Special features for taking up wear is provided in the adjustable support of the feed spout, the segment pieces comprising the circular chute or hood may be replaced readily at small cost, and the disc crushers can be set closer together as they begin to wear. To prevent escape of dust the crushing members are completely enclosed by a hood casing.

#### Interesting Monthly Publications.

Among attractive and instructive monthly publications and bulletins which are issued by corporations, manufacturers and others in the interest of the users of their products the following have recently been received by the Manufacturers Record: The

Highway Magazine, published by the Armco Publicity Bureau, 560 Walnut St., Cincinnati, O., for the American Rolling Mill Co., manufacturer of "Armco" American ingot iron roofing, pipe, gutter, terne plate and metal lath, of Middletown, O., and the magazine is also distributed by the Dixie Calvert & Metal Co. of Atlanta, Ga.; the Caterpillar Times, issued by the Holt Manufacturing Co., Inc., of Stockton, Cal., manufacturer of powerful motor tractors; the Brill Magazine, issued by the J. G. Brill Company, builder of street-railway cars, of Philadelphia; a magazine published by the Southern Public Utilities Corporation at Charlotte, N. C., in the interests of its employees and the public; Cotton Chats, issued by the Draper Company of Hopedale, Mass., manufacturer of cotton-goods machinery; The Albatross, issued by the White Company of Cleveland, O., manufacturer of pleasure and commercial motor vehicles; the Locomotive World, published in the interest of private railroad owners and users of equipment for logging, mining, plantation and industrial railroads, etc., by the Franklin Type & Printing Co., Lima, O., and Mine and Quarry, a quarterly bulletin of news for superintendents, managers, engineers and contractors, which is published by the advertising department of the Sullivan Machinery Co., 122 S. Michigan Ave., Chicago.

#### OBITUARY.

Charles A. Schieren, founder and head of the leather belting firm of Charles A. Schieren Company, 37 Ferry St., New York, died of pneumonia March 10, 1915, at his home in Brooklyn, N. Y. The passing of Mr. Schieren was made more pathetic by the death of his wife 24 hours later as the result of a similar attack. Born in Rhenish, Prussia, in 1842, Mr. Schieren came to this country at the age of 14 with his parents, who settled in Brooklyn. At the age of 22 he entered the leather belting business as a clerk, and with others established the leather belting firm of Charles A. Schieren & Co. in 1868, from which beginning the business grew steadily, being incorporated in 1890 under the name of Charles A. Schieren Company, and is today one of the largest leather belting concerns in the world, with factories, tanneries and agencies located in different parts of the United States and foreign countries.

## Special Advertisements of General Interest.

### Sale of Electric Light and Power Plant UNDER FORECLOSURE

Under and by virtue of the power of sale contained in a certain mortgage executed by Southport Light & Power Company, Inc., duly registered in the office of the Register of Deeds for Brunswick County, North Carolina, the undersigned Trustee will, on Thursday, the 15th day of April, A. D. 1915, sell at public auction, to the highest bidder for cash, at the Courthouse door in Southport, North Carolina, at twelve (12) noon, all the real estate, franchises and personal property of said Southport Light & Power Co., consisting of 40-year franchise, street-lighting contract with city, half acre of city property, 1 power-house, 1 storehouse, 100 H. P. Kingsford Scotch boiler (new), 80 H. P. Liddell Boiler, Harrisburgh-Fleming Engines, 78 H. P. (new), 80 H. P.; Crocker-Wheeler Generators, 70 K. W. (new), 50 K. W.; Kelly Feed Water Heater, Gould Pump (belt), 3 Worthington Pumps (steam), Switchboard, approx. 3 miles service lines, Transformers, etc., \$500 worth Tools, Deep Well, three-ton York Ice Plant (belt). Population of city 1500. Bonds just issued for water and sewer, municipal. This plant furnishes all power. Good-will of stockholders goes with sale. Corporation is a going concern.

THOS. E. COOPER, Trustee.

Further information and data can be obtained from H. P. O'Hagan, Secretary of Company; J. Berg, W. H. Pyke or Robert W. Davis.

Address P. O. 245, Southport, N. C.

### RELAYING RAILS FOR SALE

100 tons 45-lbs. per yard, with splices. Will sacrifice for quick shipment the whole or same or in part. Will specially prove interesting to parties desiring delivery in this vicinity.

S. Goldberg & Co., Cedar Springs, Iowa

### FOR SALE

Bought new and used on one short job.

No. 6 Arnot Hammer.....\$150  
Two 1/2-yd. Buckets (side dump)..... 25  
Pair Byers Up and Down Elevators..... 15  
Fairbanks Reversible Hoist with Gasoline Engine..... 125

Hyatt, 93 E. Oneida St. Baldwinville, N. Y.

### COMMERCIAL SECRETARY

#### Desires to Change Want Secretary to Fill Vacancy

One of the best Commercial Secretaries in the United States wants to make a change. He also wants a good Secretary to take the place he anticipates leaving. This Secretary wants to build up and guide a good commercial organization in some city with not less than 25,000 population. Results guaranteed. Address

"EXPERIENCED SECRETARY"

Care Manufacturers Record, Baltimore, Md.

### FOR SALE AT A BARGAIN TO QUICK BUYER

An up-to-date band-saw mill with drykilns, planer, etc., in daily operation; logging railroad with team and sufficient equipment for logging the mill, together with fifty to sixty million feet of standing timber (N. C. Pine); 6000 acres of land in fee, which will make splendid farming land. Water shipping at low rates by barges. Address

N. C. PINE

Care Manufacturers Record, Balto., Md.

### Sale of WATER-WORKS

Notice is given that on the 22d day of May, 1915, at Morrillton, Arkansas, I will offer for sale, on a credit of three months, all the property, real and personal, rights, privileges and franchises of the Morrillton Water-works Company of Morrillton, Arkansas. This March 15, 1915.

M. H. DEAN,  
Commissioner in Chancery,  
Morrillton, Arkansas.

### SANTA ANNA, TEXAS

Has the most complete natural-gas system in the entire Southwest. Splendid water system. Glass sand assaying 99.53% silica. The best limestone in the State. Fire and brick shades. Large and splendid agricultural trade territory. Oil and gas field developing. Large distributing territory. We invite capital to fully investigate our opportunities.

FRED. W. TURNER, Sec., Santa Anna Commercial Club

### BRICK PLANT FOR SALE OR LEASE

One of the best located and equipped operating Brick Plants in the Southwest. Manufacturers of vitrified face and paving brick. Matt face a specialty. Located at Ft. Smith, Ark. Trade covers part of four States. Terms can be made to suit a responsible purchaser. Capacity, 75,000 brick per day. Address BURKE BRICK COMPANY, Ft. Smith, Ark.

### DO YOU WANT TO

buy a practically new manufacturing plant in operation with good trade established. If so, write

JOHN P. DAVIS  
Agent Rome Scale & Mfg. Company  
ROME, GA.



### Steam Engineer Electrical Engineer and Pipe Fitter Desires Good Position

Habits unimpeachable. Punctual and attentive to Duty. Reputable Stencilor. Business and Literary Education.

Write to  
**R. N. SMITH**  
Hephzibah, Georgia

### SALES AGENCY

In New England territory would like to represent reliable concern in iron or machinery line, straight commission basis. Prompt attention to all inquiries. Have storage facilities—salesmen on road—equipped with business autos. Write for information. Address  
**VULCAN CO.** Allston Sta., Boston

**WOOD REDUCTION TURPENTINE and ROSIN PLANT**  
Located in Lake Charles, La. Shipping facilities excellent; raw material cheap and practically inexhaustible; capacity, forty tons of wood per day; latest machinery and contrivances; almost new. Will sell cheap and take one-half price in stock with operating company. For further particulars address  
**M. P. ERWIN**, Box 423, Lake Charles, La.

**Merchants Looking for Better Location**  
with all conditions in their favor, should write me about new **EARLE BUILDING**, Birmingham, Ala.—five stories and basement, strictly modern, full fireproof construction, in heart of city, and one hundred feet from best improved corner in the South.

**R. A. TERRELL**  
503 Title Guarantee Bldg. Birmingham, Ala.

**1887 1915**  
Timber, mineral, ranch and cutover lands, all Southern States, for sale and wanted. Corporation, municipal and other bonds placed. Capital for industries. Write if wanting sale or purchase.

**W. W. MARMADUKE**  
Washington, Indiana

### Your chance to open up a new market for your goods in SOUTH AMERICA

If interested, write at once to

**FRIEDR. W. LUTZ**

**RICHMOND, VA.**

Personal Representatives in Brazil and the Argentine Republic.

**N&W  
RY.**

**KAOLIN CONSUMERS** may find it to their interest to secure full information about a deposit of **HIGH-GRADE KAOLIN** recently discovered and developed in the Shenandoah Valley of Virginia.

Chemical analysis gives following results:

**N&W  
RY.**

Silica .....	66.36
Aluminum Oxide.....	22.66
Iron Oxide.....	1.70
Calcium Oxide.....	Trace
Magnesium Oxide.....	.35
Loss on Ignition.....	6.96
Alkalies, &c.....	.57

The deposit contains about one million tons. Physical tests made of material show it to be of a very high grade, having great plastic qualities, burns white and uniform.

No better or larger deposit of kaolin available anywhere. Good location for pottery or tile factories. Clay consuming industries may find it advantageous to locate where raw material, labor and transportation facilities are equal to the best.

Write for detailed information to

**F. H. LA BAUME**, Agr'l and Ind'l Agent, N. & W. Rwy., Roanoke, Virginia,  
REFERRING TO FILE M-5986.

## Bargains in Machinery and Supplies.

### FOR SALE

16" Berlin Band Resaw, No. 284, with Covel Automatic Grinder and Roller.  
118" Connell & Dengler Printer, Single Color.  
112" Connell & Dengler Single Color Printer.  
130" Buffalo Knife Grinder with circular saw gumming attachment.  
16" Rogers Automatic Band Saw Grinder without roller.  
118" Buffalo Fan.  
1 Beech Rip Saw Table, 5x5 1/2'.  
1 Fay & Egan 30" Divided Roll Double Sur-facer.  
1 R. C. Lowry Shook Bundling Machine.  
1 Knight Mfg. Co. Self-Feed Rip Saw.  
18" Peerless Belt Lacing Machine.  
150 H. P. General Electric Motor with start-ing box.  
110 H. P. General Electric Motor with start-ing box.  
120 H. P. General Electric Motor with start-ing box.  
110 H. P. General Electric Motor (heavy)  
1 Blacksmith Post Drill Press.  
All in first-class condition. Will sell cheap and take lumber in payment.  
For prices, description, etc., write  
**AMERICAN BOX CO., INC.**, P.O. Box 265, Lynchburg, Va.

### Cheap For Quick Removal

30-ton Refrigerating or 15-ton Ice-Making Corliss Driven Penna. Iron Works Ice Machine complete.

**HERMAN L. WINTERER**  
908-910 Beach Street, PHILADELPHIA, PA.

### BRICK MACHINERY

#### For Sale

Berg Four-Mold Dry Press in A-1 condition. Ten special wheel trucks and set dies and liners for same. 20,000 brick per ten-hour day.  
Also, No. 1 Union Freese Stiff Mud Brick Machine and No. 16 Rotary Cutter, made by E. M. Freese & Co., Gallon, O., and recently replaced with larger capacity machines of same make. Good for 40,000 per day. Prices right to move quick. Address  
**RICHLANDS BRICK CORP.**, Richlands, Va.

### ALTERNATORS FOR SALE

AT BARGAIN PRICES.—One 120 K. W. Westinghouse 133-cycle Single-phase Alternator. One 200 K. W. Westinghouse 133-cycle Single-phase Alternator. One 300 K. W. General Electric 133-cycle Single-phase Alternator. Address  
"H. F. W., Jr."  
309 Colby-Abbot Bldg., Milwaukee, Wis.

## USED MOTOR CARS AND TRUCKS

ASK FOR LATEST LIST TODAY

**MAR-DEL MOBILE CO.**

BALTIMORE, MD.

REFERENCES—BROADSTREET OR DUN.

### AT A BARGAIN

3 Lidgerwood Hoisting Engines, cylinders 8 1/4 x 10, D. D., D. C., first-class condition.

1 Wetherall Twin Corliss Engine, cylinders 20x42, first-class condition.

2 5" Worthington Turbine Pumps, D. C. to 85 H. P. motors.

Plants Bought and Dismantled

**BOSTON IRON & METAL CO.**  
Pratt St., BALTIMORE, MD.

### SAFES

Three very fine burglar-proof safes, suitable for bank, factory or large mercantile house. Rare bargain. A full line of new and used safes.

**THE HOWE SCALE CO.**  
CINCINNATI, OHIO

### DIESEL OIL ENGINES

Two 75 H. P. Three-Cylinder Belted Type; seen running. Bargain.

**POWER EQUIPMENT COMPANY**  
500 Fifth Avenue, New York

### DIRECT CONNECTED GENERATING SETS FOR SALE CHEAP

2 25 K. W. 125 V. 200 Amp. D. C. "Westinghouse" driven by 8 1/2 x 8 1/2" Vert. Auto. "Westinghouse" Engine, with switchboard and instruments.  
No reasonable offer refused.

**JNO. L. TAYLOR**, 6315 Torresdale Ave., Philadelphia, Pa.

### COTTON MILL MACHINERY FOR SALE

We have for sale \$36,905.33, rock bottom valuation, Cotton Mill Machinery in fine condition that we want to sell. For full particulars address  
**Fidelity Real Estate & Trust Co.**  
Praetorian Bldg., Dallas, Tex.

### FOR SALE

Boilers, Stationary Engines, Hoisting Engines, Pumps, new and second-hand, every size and for every duty.

**HOWARD W. READ COMPANY**  
Third and Arch Sts. Philadelphia, Pa.

### TUBULAR BOILERS For Sale

Two second hand 30 H. P. horizontal tubular boilers, complete with front grate bars, etc.

**SCHROEDER HEADLIGHT CO.**, Evansville, Ind.

### FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.  
Four Steel-Guyed Stacks, 6'x100'.  
One Steel Self-Supporting Stack, 10'x150'.

**CENTRAL TRANSFER CO.**  
415 N. Front St. BALTIMORE, MD.

### Machinery Bargains

14-ton 9"x14" Porter Locomotive, 36" gauge.  
4-yd. K. & J. Dump Cars, 36" gauge.  
3-yd. All-Steel Dump Cars, 30" gauge.  
200 tons 60 and 70-lb. Relaying Rails.  
120 tons 12 and 16-lb. Relaying Rails.  
175 tons 12" 35 and 40-lb. Sheet Piling.  
50 24" 80 and 100-lb. I Beams, 30 to 39.  
300 15" 42 and 60-lb. I Beams, 15 to 13.  
200 12" 40-lb. I Beams, 15 to 13.  
40 100x15 All-Steel Frame Buildings complete, ready to erect.

Write for Free Complete List No. XB-213.

**Harris Brothers Company, Owners**

**CHICAGO HOUSE WRECKING CO.**

35th and Iron Sts. CHICAGO, ILL.

### PUMPS Blowers and Filter Tanks

One Deane Steam Pump, No. 16165, horizontal duplex double-acting compound non-condenser plunger and ring pattern, 14-20-12-13.

One Worthington Steam Pump, No. 100,132, size 7 1/2 x 14 x 10.

Filtration Plant, manufactured and installed by New York Continental Jewell Filtration Co., original cost \$5500, consisting of 4 filter tanks 16 ft. in diameter by 8 ft. high, with 2 ft. of sand in each; worth \$1000. Also, F. M. Roots Co. 4-in. Centrifugal Blower, size 2, No. 27271, with upright engine, No. 5148, made by N. Y. Steam Power Co. for operating same.

### John C. Stearns

N. Y. Life Bldg., Kansas City, Mo.

### FANS FOR SALE

Two 16-foot Capel Fans, almost new; one 16-foot Robinson Fan, and one 14-foot Robinson Fan, all the above with direct driven engines. Bargains. Address  
**ROBINSON VENTILATING COMPANY**  
Jenkins Arcade Building, Pittsburgh, Pa.

### USED MOTORS

This list of motors are all in excellent working condition, thoroughly up-to-date machines, at a big saving over the cost of new. Can ship immediately.

#### DIRECT CURRENT

1 30 H. P. "Sprague-Lundell," 250 volts.  
2 10 H. P. "Diehl," 220 volts.  
1 10 H. P. "Allis-Chalmers," 220 volts (new).  
1 5 H. P. "Allis-Chalmers," 220 volts (new).  
1 5 H. P. "Allis-Chalmers," 220 volts.  
1 3 H. P. "Allis-Chalmers," 220 volts (new).  
1 2 1/2 H. P. "Westinghouse," 220 volts.

#### ALTERNATING CURRENT

1 30 H. P. "Wagner," 220 volts, 2-phase, 60 cycles.  
1 20 H. P. "General Electric," 220 volts, 2-phase, 60 cycles.  
1 12 H. P. "Westinghouse," 200 volts, 2-phase, 60 cycles.  
1 10 H. P. "Allis-Chalmers," 220 volts, 2-phase, 60 cycles (new).  
1 5 H. P. "Allis-Chalmers," 220 volts, 2-phase, 60 cycles (new).  
2 5 H. P. "Westinghouse," 220 volts, 2-phase, 60 cycles.  
1 3 H. P. "Westinghouse," 200 volts, 2-phase, 60 cycles.  
1 2 H. P. "Allis-Chalmers," 220 volts, 2-phase, 60 cycles (new).

We also have a number of direct connected generator sets, belt-driven generators, switchboards, engines, boilers, pumps and heaters. Send for latest list of steam and electric power equipment.

**L. F. SEYFERT'S SONS, Inc.**

437 North Third Street Philadelphia

### FOR SALE

#### Cheap Before Removal

Train, two 21" Roughing Mills.  
Train, four 12" Guide Mills.  
Train, three 10" Guide Mills.  
600 H. P. Buckeye Twin Steam Engine.  
650 Wetherill Corliss Rolling Mill Engine.  
Two-ton Sprague Electric Hoists, D. C.  
400 H. P. Motor A. C. Switchboard.  
50 H. P. A. C. Motors.  
No. 5 1/2 Root Blowers, with valves.  
4" and 6" Air Hoists.  
Covington Vertical Shear, cap. 4" sq. cold.  
Jib Cranes, Scales, etc.  
We purchase the entire equipment of industrial plants.  
What have you for sale?

**W. L. BIRTWELL**

Croser Building, Philadelphia, Pa.

### POWER and COAL MINING EQUIPMENT

IN EXCELLENT CONDITION

#### FOR SALE

Direct Current Generating Sets, 250 and 550 volts.  
Boilers, 150 H. P., Return Tubular.  
Feed Water Heaters—Cochrane, Stillwell-Bierce and McGowan.  
Horizontal and Vertical Steam Engines, 5 to 320 H. P.  
Air Compressors—Laidlaw-Dunn-Gordon and Norwalk, capacities 900 cu. ft. to 2100 cu. ft.  
Separators, Steam Traps and Piping.  
Steam Pumps, Piston and Plunger, best makes.  
Mining Equipment. Full list furnished on request.

### NEW RIVER COMPANY

Equipment Sales Department **MACDONALD, W. VA.**

In replacing our manufacturing equipment we find the following first-class

## Used Machine Tools

which we offer at attractive prices

16"x 6' Read.  
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20"x 8' Lodge & Shipley, Q. C. G.  
20"x 10' Lodge & Shipley, Q. C. G.  
20"x 12' Lodge & Shipley, Q. C. G.  
24"x 8' Lodge & Shipley, Q. C. G.

### SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.  
24"x 7' Lodge & Shipley Chucking Lathe.  
14"x 6' Towley Speed Lathe.  
2 18"x 8' Lodge & Shipley Single Pulley Driven Lathes.

### METAL SAWS

Globe Power Hack Saw, 8" capacity.

### MISCELLANEOUS MACHINES

One Marion Double Grinder.  
One Marion Double Grinder on stand.  
One Diamond Combination Grinding and Polishing Stand on column.  
One Sturtevant Blower, diameter of outlet 25".  
One "Ohio Planer," 24"x24"x12", with two heads on cross rail.  
Universal Swivel Table for Radial Drill.  
Brown & Sharp Grindstone Frame for 5"x36" stone.  
One Mueller Grindstone Frame for 4"x27" stone.  
One 12"x40" Munford Molding Machine.  
Write for complete description with prices of machines in which you are interested.

The Lodge & Shipley Machine Tool Co.  
CINCINNATI, OHIO

## FOR SALE Corliss Engines

2 300 H. P. each 18x30 Allis-Chalmers HEAVY-DUTY Rolling Mill Type Frame Corliss Engines. Band wheels 11' in diameter by 31" face.

1 14x26 St. Louis Girder Frame Corliss Engine. Band wheel 10' in diameter by 19" face.

All are in excellent condition.

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### Special Bargains in Sanders

1 42" 3-drum Perfection Sander, thoroughly overhauled.....\$350.00  
1 48" 3-drum Thomas Sander.....\$400.00  
1 48" 4-drum H. B. Smith Sander.....\$500.00  
1 48" 3-drum Royal Invincible Sander, used only 3 weeks.....\$550.00  
1 54" 3-drum J. A. Fay & Co., fine order.....\$500.00  
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1 20" Carrey Hand Jointer.....\$100.00  
1 30" Buze Extra Heavy Hand Jointer.....\$125.00  
Woodworking machinery of all kinds.  
Write, stating your requirements.

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1922 Scranton Road Cleveland, O.

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Send to Prentiss  
Tool & Supply Co.,  
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latest complete list of  
used machinery.

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Miscellaneous assortment of Veeder Odometers registering 0 to 10,000. Can be used on any device where counting is necessary. Can quote very low price. If interested, send for samples.

STEWART-WARNER SPEEDOMETER CORP.

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### WE HAVE 16 Water-Tube Boilers

200-400 H. P.

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EDGAR M. MOORE & COMPANY  
PITTSBURGH

### CORLISS ENGINES

13x36 H. D. Quincy Corliss.  
2 14x36 St. Louis & Murray.  
2 22x42 Hamilton.  
28x48 Hamilton.  
30x60 Heavy Duty H. & B.  
32 & 62x60 Allis Hor. Cross C.  
26 & 54x60 Allis Hor. Tand. C.

WILSON MACHINERY CO.

419 Pine St.—OTHER SIZES—St. Louis.

### A. C. UNITS 3 PHASE 60 CYCLES

K.W.	Make	Volts	Rev.	Engine
50	Burke	440	3600	Kerr Turb. (Steam).
125	Westge	240	3600	Parsons Turb. (Steam).
165	Westge	440-220	225	18x18 Erie City.
300	Westge	440-220	200	Westge. Vert. C. Comp.
300	G. E.	480	200	24x22 Erie Ball.
2	300 G. E.	550-440	225	
400	G. E.	2300	120	Me. I. & S. Vert. C. C.
2	400 G. E.	2300	150	18 & 36x30 Buckeye.
3	500 Westge.	2300-440	3600	H.P. Westge. St. Turb.
600	Westge.	440	90	32x48 Allis Corliss.
1600	Westge.	Any	1800	Low-pressure Turb.
1000	Ge. El.	Any	1800	Mix-pressure Turb.
2	1000 Westge.	Any	1800	H.P. Westge. St. Turb.

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Buy, Sell and Exchange Machinery  
of All Kinds  
WRITE US YOUR WANTS

## REFRIGERATING MACHINE

3-Ton Racine Vertical, two cylinder, belted type Refrigerating Machine, complete with condenser, ammonia receiver, oil trap, gauges, cooling-room coils and hold-over tank; little used. Bargain for quick sale; less than one-half new cost.

The Assets Purchasing Company  
Wheeling, W. Va.

### BOILERS

2 125 H.P. B. & W., 150 lbs. pressure.  
200 H.P. Erie City, 150 lbs. pressure.  
200 H.P. Heine, 160 lbs. Marine Casing.  
2 250 H.P. Sterling, 150 lbs. pressure.  
2 250 H.P. Heine, 160 lbs. pressure.  
2 300 H.P. Edgemoor, 175 lbs. pressure.  
350 H.P. Heine, 150 lbs. pressure.  
6 550 H.P. B. & W.-A. & T., 150 lbs. pressure.

WILSON MACHINERY CO.

419 Pine St.—OTHER SIZES—St. Louis.

### BOILERS

3 150 H. P. High-Pressure Boilers.  
1 125 H. P. High-Pressure Boiler.  
1 100 H. P. High-Pressure Boiler.  
1 125 H. P. Skid Boiler.  
5 100 H. P. Standard Boilers.  
2 80 H. P. Standard Boilers.  
2 50 H. P. Standard Boilers.  
2 45 H. P. Standard Boilers.  
4 40 H. P. Vertical Boilers.  
1 35 H. P. Vertical Boiler.  
2 25 H. P. Vertical Boilers.  
8 20 H. P. Vertical Boilers.  
1 42"x72" No. 8 Steel Smokestack, good as new.

Also Pumps, Pipe, Fittings, Gas Engines and Hoists

Bailey & James Boiler & Machy. Co.  
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One 1-million-gallon, vertical, compound, McGowan Pump. Only in operation about three years; reason for selling installation of new equipment. Pump in good condition. Price and full description will be given by

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### ENGINES Plain, Automatic, Corliss, Gasoline or Oil

### BOILERS VERTICAL or HORIZONTAL

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DECATUR NOVELTY WORKS, Decatur, Ill.

### Sturtevant Crusher FOR SALE

Used only en days; perfect condition; especial bargain.

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New Electric Light and Power Plant, equipped with both water and steam power; furnishing current for town of 1500 people. For price and terms address

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### Motors, Dynamos, Switchboards, Etc.

400 H. P. G. E. Induction Motor, 720 R. P. M., 2200 volts, complete.....\$3000.00  
75 H. P. Westinghouse, slip ring.....425.00  
75 H. P. G. E. slip ring, new, 850 R. P. M., complete.....500.00  
50 H. P. Allis-Chalmers, 3-phase, new, 850 R. P. M., complete.....300.00  
50 H. P. G. E., 2-phase, 850 R. P. M., complete.....245.00  
35 H. P. G. E., 3-phase, 850 R. P. M., complete.....215.00  
35 H. P. Westinghouse, 2-phase, 1140 R. P. M., complete.....200.00  
25 K. W. C. & C. to Watertown engine, 115 volts.....400.00  
30 K. W. Eddy to New York safety engine, 120 volts.....500.00  
Large stock of smaller motors and dynamos, both A. C. and D. C. Let us have your requirements.

R. Scheinert & Co., 125 N. Third St., Philadelphia

### FOR SALE

75 K. W., 125 V., 275 R. P. M. Ridgway Dynamo & Engine Co. outfit in excellent condition, \$700 before removal.

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145 N. Third Street, Philadelphia, Pa.

### FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 18"x10", 18"x8", 16"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x8". Second-hand lathes, cone head, plain gears, 20"x18", 20"x16", 20"x10", 18"x8", 13"x6", 13"x5".

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Two Austin No. 2 Deep Well Drilling Machines in good shape, fully equipped with tools and gasoline engines mounted on frame, together with well-established business. Also have Hupp automobile for sale with them. Address

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### SPECIALS

16x36 Watts-Campbell Corliss Engine, in perfect condition, \$500.  
Three 72"x18" H. R. T. Boiler, 2 years' service, 150 pounds pressure, \$400.  
500 H. P. Heine Water-Tube Boiler, 6 years' service, 150 pounds pressure, \$1675.

### DUZETS & SONS

Hudson Terminal Bldg. NEW YORK

## THERE IS A REASON

why our properly rebuilt Machinery gives satisfaction

### ASK US

ENGINES, CORLISS: 26x48 Filer & Stowell, heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x42 Hamilton; 12x42 Nagle; 12x30 Hamilton; 10x30 Hamilton; 8x24 Hamilton.

ENGINES, AUTOMATIC: 2 21x22 Ridgway; 19x18 Ball; 14x14 Ideal; 10x16x12 Buffalo Compound; 12x14 Green; 12x12 Armstrong & Sims; 10x18 Buckeye; 9x10 New Victor; 8x10 Noyes; 8x10 McEwen; 5x6 Harrisburg.

ENGINES, THROTTLING: 20x24 H. & G.; 16x18 Skinner; 16x18 Ames; 14x14 Lewis; 12x13 New Enterprise; 12x14 Gibbs; 11x16 H. & G.; 10x12 Ajax; 10x15 Nagle; 8x16 Brownell; 8x10 New Erie; 8x10 Brownell; 7x10 Atlas; 6x8 Boggs; 5x4 Kriebel.

BOILERS, STATIONARY: HIGH PRESSURE: 1 300 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 80 H. P. for 125 lbs.; standard from 150 H. P. to 20 H. P. for 100 lbs.

BOILERS, FIRE BOX: 150 to 10 H. P. high and low pressure.

BOILERS, VERTICAL: 100 to 4 H. P. plain and submerged tubular.

GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belt; pipe, valves and engine and boiler fittings.

Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

### THE RANDLE MACHINERY CO.

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STEAM ENGINE AND MOTOR DRIVEN PUMP  
25 H. P. 9x12 Nagle Center-Crank Plain Slide-Valve Engine in excellent condition at low price.

Motor-Driven Centrifugal Pump, 250 gals. per min. against a 225-ft. head, practically new, at half price. Will equip with any style motor desired.  
Electrical apparatus of all kinds at lowest prices.

V. M. NUSSBAUM & CO., Fort Wayne, Ind.

### BORING MILL

84" Sellers, overhauled by Sellers Co., complete with 2 heads, \$650.  
4 24x6 Deane Triplex Pumps, designed for 750 lbs. pressure, \$60 each.

GEO. SACHSENMAIER & CO 145 N. 3d St., Phila., Pa.

## HYDRAULIC PRESSES

WE have just purchased fourteen Hydraulic Presses, Boomer & Boschert make, designed for 350 tons pressure, extra heavy downward pressure type. These presses have steel beams, steel cylinders and iron platen. Inside diameter of cylinders 20". Diameter of steel rods 4 1/2". Width between rods 72". Movement of ram about 48". Platen 62" square. These presses were formerly used in fertilizer work. We have sold quite a few of them to be used in other classes of work requiring hydraulic presses. We are selling them cheap in order to move them quickly. If interested, write us for cuts and full description.

### MACHINE TOOLS

60"x60"x14" Sellers Planer, 4 heads.  
60"x60"x14" Pond Planer, 2 heads.  
48"x48"x15" Sellers Planer, 2 heads.  
72" Bickford Vertical Boring Mill, 2 heads.  
60" Sellers Vertical Boring Mill, 2 heads.  
48" Sellers Vertical Boring Mill, 2 heads.  
36" Bickford Radial Drill.  
3500 lbs. Bement-Miles Double-Frame Steam Hammer.  
350 lbs. Bement-Miles Single-Frame Steam Hammer.  
6" Oster Pipe Machine.  
No. 3 Kempsmith Plain Milling Machine with universal dividing heads.  
36"x12" Hess Heavy-Duty Slab Milling Machine.  
12" Niles Slotter.  
38"x20" Fifield Lathe, triple geared.  
26"x12" Fifield Lathe, triple geared.  
6" Cox Pipe Machine.  
16"x6" Hendey Lathe, taper attachment.  
14"x8" Hendey Lathe.  
10" Bignall & Keeler Pipe Machine.  
30" Throat Double-End Punch and Shear, weight 3500 lbs.  
14"x5" Lodge & Shipley Lathe, pan bed, taper attachment.  
30 new Lathes 14 to 30" in stock; immediate delivery.

### POWER EQUIPMENT

Boilers  
2 350 H. P. Sterling Water Tube, 150 lbs. steam working pressure.  
3 250 H. P. Franklin Water Tube, 150 lbs. steam working pressure.  
1 150 H. P. Babcock & Wilcox Water Tube, 150 lbs. steam working pressure.  
6 150 H. P. 72"x18" Horizontal Tubular, 125 lbs. steam working pressure.

### CORLISS ENGINES

24"x42" Allis, left hand.  
18"x42" Watts-Campbell, right hand.  
16"x36" Allis, left hand.

2 14"x36" Scottdale, right and left hand.  
14"x36" Lane & Bodley, left hand.  
12"x36" Allis, left hand.

2 500-gal. 14"x74"x12" Underwriter's Fire Pumps.

### AIR COMPRESSORS

1 18" x 20 1/2" — 13 1/4" x 24" Ingersoll-Sargeant Class A Straight Line, two-stage. Capacity 940 cu. ft.  
1 20" x 22 1/2" x 24" Ingersoll-Sargeant Class A Straight Line. Capacity 973 cu. ft.  
1 12" x 14 1/2" x 14" Ingersoll-Sargeant Class A Straight Line. Capacity 385 cu. ft.  
1 12" x 12" x 16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.  
1 10" x 10" x 10" Ingersoll-Sargeant Duplex. Capacity 275 cu. ft.

### ELECTRICAL EQUIPMENT

DIRECT CONNECTED UNITS.  
150 K. W. 250-volt D. C. Crocker-Wheeler, with Wright Horizontal Tandem Compound 14 1/2" x 24" x 16" Engine.  
105 K. W. 220-volt 3-phase 60-cycle A. C. Westinghouse Alternator, with 15"x18" Buckeye Horizontal Automatic Engine.  
50 K. W. 125-volt D. C. Westinghouse, with Westinghouse Vertical Compound Automatic Engine 10"x18"x10".  
35 K. W. 125-volt D. C. General Electric, with Harrisburg Horizontal Automatic Engine 10"x12".

### MOTORS and GENERATORS

Motors, direct and alternating current, all sizes from 1 to 100 H. P., in stock for immediate delivery.

Send for our list.  
Generators, large stock from 1 K. W. to 75 K. W., 110 and 220-volt, direct and alternating current.

SPECIAL: 2 500 K. W. 550-volt 3-phase 60-cycle General Electric Alternators, 500 H. P. M.

## FRANK TOOMEY, Incorporated

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# Railroad and Contractors' Equipment and Supplies.

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ATLANTA, GA.

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FREIGHT CARS

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LARGEST STOCK REBUILT EQUIPMENT IN U. S.

## GEORGE M. NEWHALL ENGINEERING COMPANY

New York

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### RELAYING RAIL

Shipments Made from Stock on Day Following Receipt of Order

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2500 tons.....	60 lb.	1500 tons.....	68½ lb.
1000 tons.....	63 lb.	1000 tons.....	70 lb.
275 tons.....	67 lb.	1000 tons.....	74 lb.

With Angle Bars.

Small Lots of Other Weights.

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### Locomotives

#### Four wheel type

40 tons; 17"x24"; 160 lbs. pressure

Overhauled  
ModernE. H. WILSON & COMPANY  
ABRAHAM BUILDING  
PHILADELPHIA

**THAW & WILLIAMS**  
CONTRACTORS & RAILWAY  
EQUIPMENT  
QUARRY & BRICK PLANT  
MACHINERY  
OUR SQUARE DEALINGS WILL WARRANT  
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BELL BLOCK  
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LACKAWANNA STEEL SHEET PILING, RAILS, LIGHT AND HEAVY SECTIONS. STRUCTURAL SHAPES.

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## EQUIPMENT

3-ton, hand-power traveling crane, 22-ft., 104-inch span. 180-feet of 30-pound rail. 480-feet Koppel portable track, 12-pound rails on steel tie, 24-inch gauge. 2 platform cars. All slightly used and in excellent condition.

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## Steam Shovel

One Thew revolving type "O" standard gauge steam shovel, and one Bucyrus 1½-yard 45-ton standard gauge steam shovel. Both machines in first-class condition.

M. MITSHKUN CO.

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Two ten-ton gasoline macadam rollers, latest types, standard makes, nearly new. Write.

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Care THE MANUFACTURERS RECORD

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One No. 14 Smith Mixer with steam engine only, mtd. on steel skids, with batch charging hopper, power tilting device, auto. tipping device. Capacity, 46 cu. ft. dry, 31 cu. ft. wet. Strictly first-class condition, just as good as new. In Cincinnati stock. My MONTHLY STOCK LIST contains some exceptional bargains. Write for same.

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## PIPE NEW & SECOND HAND

Furnished with Threads and Couplings.

Suitable for All Practical Purposes

All Sizes In Stock Ready for Shipment

Send us your inquiries and get our prices. It will interest you.

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### Second-Hand

All Sizes, ½" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

Marine Metal &amp; Supply Co.

167 South St.

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Released by Pennsylvania R. R.

HENRY LEVIS &amp; CO.

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35 lb., 40-lb., 56-lb., 60-lb., 70-lb., 80-lb., 85-lb. and Angle Bars to lay same

Advantageously located for Southern delivery; also other weights of RELAYING RAILS, in different sections of the country; and NEW STEEL RAILS, all weights. We handle first-class Relaying Rails and do not select them from scrap. Let us know your requirements. We buy Rails fit to relay, and pay spot cash.

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Low Prices on New FROGS and SWITCHES.

## RAILS LOCOMOTIVES

### RELAY RAILS

LOCOMOTIVES—Narrow and Standard Gauge. 150 Locomotives at our shops, 6 to 80 tons. Freight and Passenger Cars.

Largest Stock Locomotives in United States

Southern Iron &amp; Equipment Co. ATLANTA, GA.

### LOCOMOTIVE FOR SALE

One Standard Gauge American Locomotive in prime condition, cylinders 15x22. For price, address

Post Office Box 606, SUMTER, S. C.

### RELAYING RAILS

56 to 80-lb. sections, located in different parts of the country, and all equipped with angle bars to fit. Ready for prompt shipment. New or relaying light rails at low prices. New frogs, switches, bolts, spikes, etc.

HYDE BROTHERS STEEL &amp; RAIL CO. 610 Benedum-Trees Bldg. Pittsburgh, Pa.

## Relaying Rails

For Sale—25 miles, 25-lb. rail, North Carolina delivery.

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### The West Va. Rail Co.

HUNTINGTON, W. VA.

Manufacturers Light Steel Rails

12, 16, 20, 25, 30, 35, 40 lbs. per yd. We are also dealers in Relaying Rails. All Sizes.

## Steel Sheet Piling

5000 pcs. Lackawanna and Carnegie, various widths and lengths, in good shape, at attractive prices. Send your inquiries as we may be able to serve you to advantage.

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LOCOMOTIVES, STEAM SHOVELS and RAILS

We have at our shops in Birmingham, thoroughly overhauled, 48 standard and 3 gauge Locomotives.

Also 10 Marion and Thew Shovels. Also, 3000 tons of Relaying Rails, all weights. Write us for prices and terms.

Birmingham Rail &amp; Locomotive Co., Birmingham, Ala.

40-60,000 Cap.

### Hopper Bottom Gondolas

First-Class Condition.

Lowest Prices Ever.

"ZELNICKER" In ST. LOUIS

### A. S. C. E. Sections

LIGHT STEEL RAILS

PROMPT DELIVERY.

8, 12, 16, 20, 25, 30, 35, 40 pounds per yard. With Splices and Spikes.

UNITED STATES RAIL CO.

Manufacturers, Cumberland, Md. Certificates of Inspection by Hildreth &amp; Co., Inspecting Engineers of New York City, assuring absolutely first quality, furnished free of cost.

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## RELAYING STEEL RAILS

About 700 Tons, 56 lbs. per yard,

with plates

About 43 Tons, 58 lbs. per yard,

with plates

About 600 Tons, 60 lbs. per yard,

with plates

### New Steel Rails

All Weights.

THE STEEL RAIL SUPPLY COMPANY

2 Rector St.

New York, N. Y.

### RELAYING RAILS

20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 80, 85, 90 and 100 lb., all with Fish Plates.

### NEW RAILS

8, 12, 16, 20, 25, 30, 35, 40, 45 lb., at manufacturer's prices.

LARGE TONNAGES—Carload and less carload lots, advantageously located for Southern delivery.

Splice Bars for any section rail in stock.

Frogs, Switches, Bolts, Nuts, Spikes, and all Track Accessories.

New and Second-hand Pipe, all sizes, with good Threads and Couplings.

Rebuilt Locomotives, Cars and Equipment.

All second-hand materials guaranteed. Subject to inspection during loading, or will ship subject to your approval at destination.

Attractive Prices. Quick Shipment.

Before buying write for our bulletin.

L. B. FOSTER CO., Park Building, Pittsburgh, Pa.

### RAILS FOR SALE

All sections relayers and new rails for prompt shipment.

Also coaches, locomotives, steam shovels, box, flat, gondola, hopper-bottom and Rodger Ballast cars.

THE ISAAC JOSEPH IRON COMPANY

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## STEEL RAILS FOR SALE

500 tons 45-lb. Relayers, 100 tons 30-lb. Relayers. Complete Sawmill. Allis Band and Resaw, capacity 90,000 per day.

CAMPBELL LUMBER COMPANY

Marlinton, West Va.

## RELAYING RAILS FOR SALE

500 Tons 80-lb. Rails.

500 Tons 90-lb. Rails.

Several Locomotives and Cars.

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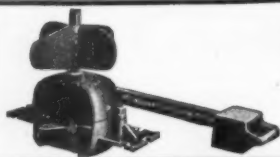
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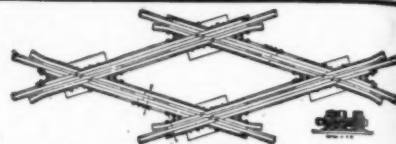
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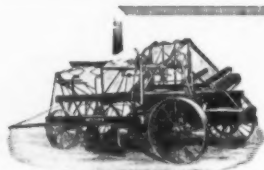
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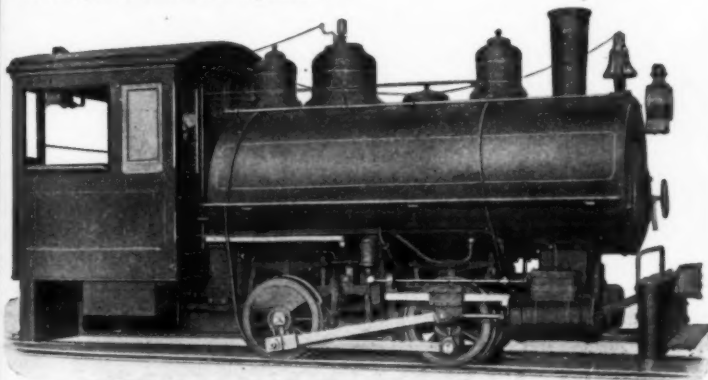
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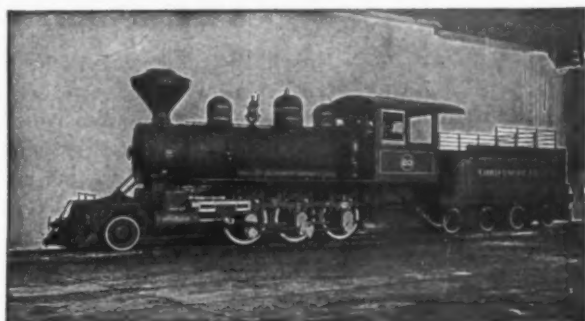
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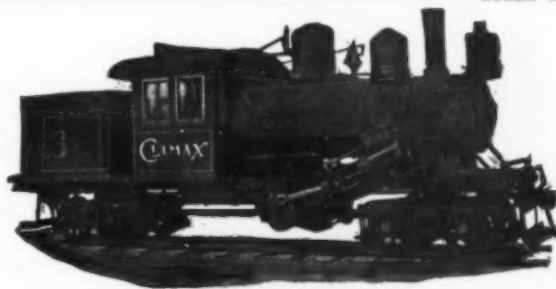
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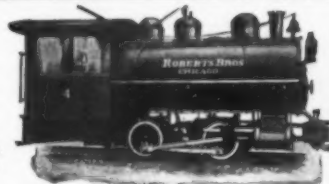


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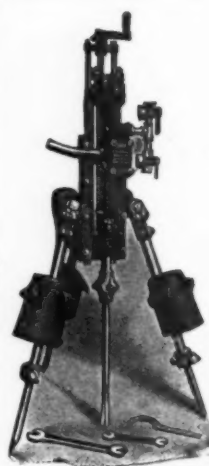
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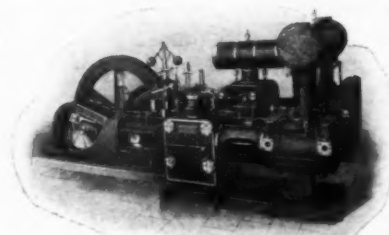
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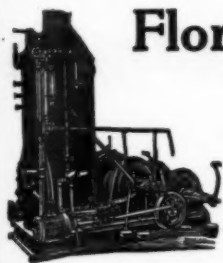
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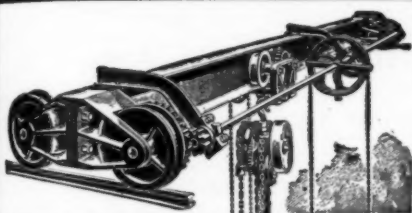
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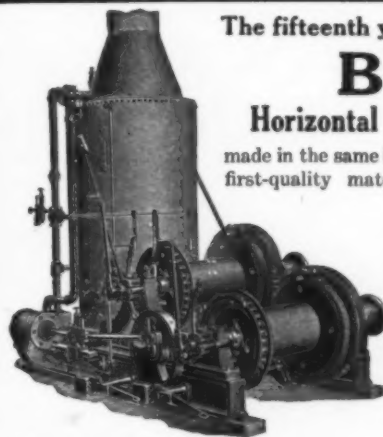
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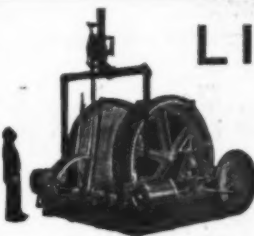
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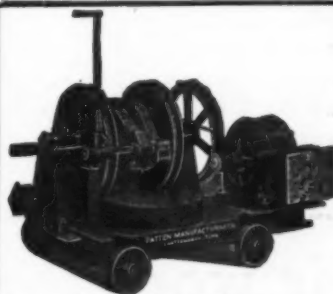
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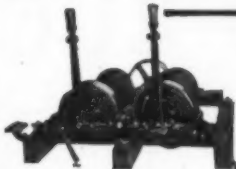
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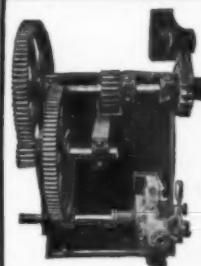
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For raising and lowering  
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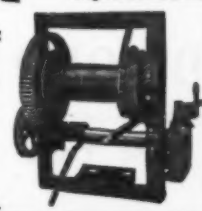
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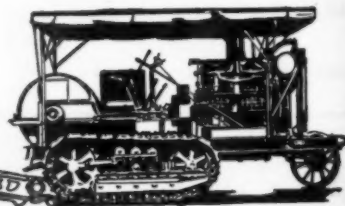
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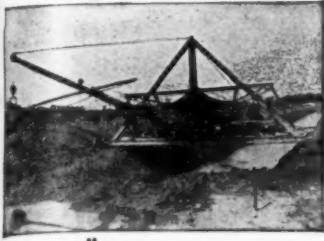
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Excavation of All Kinds—

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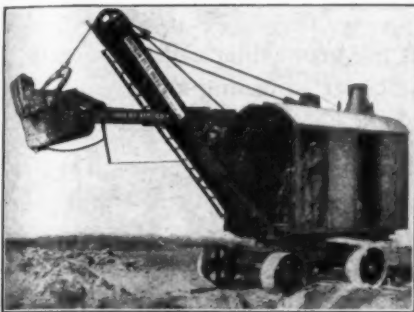
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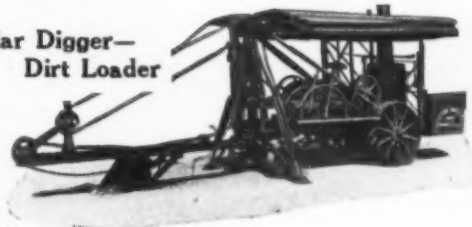
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all combined in one general utility machine for contractors.

It is light enough (weight 8 tons) to cross culverts and small bridges safely; self-moving over steep and hilly roads; easily operated and low priced. Descriptive Bulletin on request.

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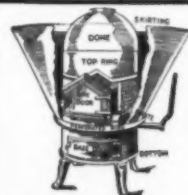


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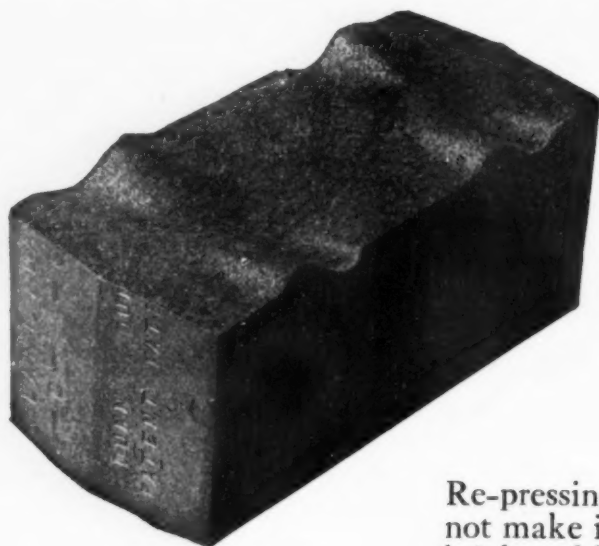
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Re-pressing does not improve brick. It injures it. It does not make it more compact or homogeneous. It enlarges the brick and breaks up its structure. It makes it less dense and sets up laminations.

**Re-pressing was merely** a process that had to be gone through in order to form lugs to insure proper spacing.

The Dunn wire-cutting and lug-forming machine preserves all the density and homogeneity of the brick as it comes from the auger machine.

It does more. It forms lugs and grooves on one

**The wire-cut surfaces** are rough enough to insure perfect bonding.

The double-bevelled ends insure proper bonding there.

Dunn Wire-Cut-Lug Brick is the only type of paving brick with proper lugs that does not have to go through the deteriorating effect of repressing. The lugs, being on one face only, proper laying by unskilled labor is rendered more certain.

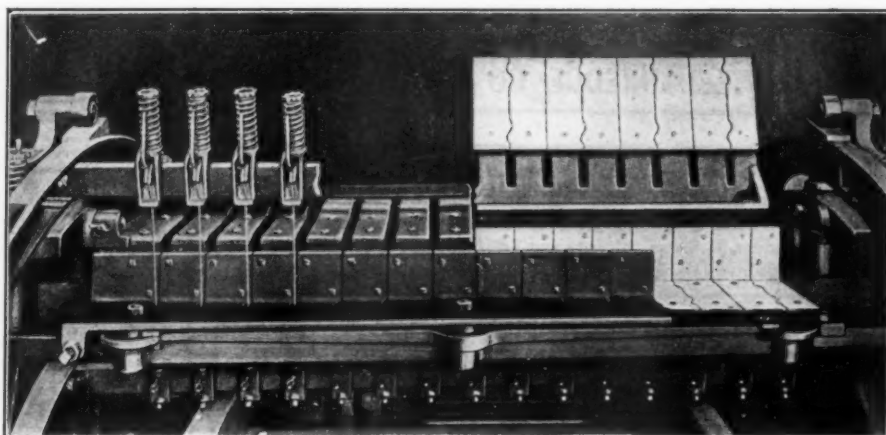
It is furnished by independent and competing brick makers, licensed after submitting proof that they can make good brick.

**Dunn Engineering Service**, urged on users without charge, helps insure proper paving construction.

When you specify Dunn Wire-Cut-Lug Brick you

face in such a way that the grout filler can flow freely between the bricks and cover adjoining faces.

It forms sharp, square edges, while re-pressing forms rounded edges. With the square edges of Dunn Wire-Cut-Lug Brick, the grout filler can be poured flush with the top of the pavement, thus preventing it from breaking away under traffic.



Machine for Cutting Wire-Cut-Lug Brick.

insure the quality of the brick and of the pavement. Our engineers are ready to go fully into the matter with you. Service records and full paving-brick data are yours for a word.

## Dunn Wire-Cut-Lug Brick Company

### CONNEAUT, OHIO

#### LICENSEES:

Corry Brick & Tile Company, Corry, Pa.  
One plant at Corry, Pa.  
United Brick Company, Greensburg, Pa.  
One plant at Conneaut, Ohio.  
Sterling Brick Company, Olean, N. Y.  
One plant at Olean, N. Y.  
Reynoldsville Brick & Tile Company, Reynoldsville, Pa.  
One plant at Reynoldsville, Pa.  
Danville Brick Company, Danville, Ill.  
One plant at Danville, Ill.  
Clinton Paving Brick Co., Clinton, Ind.  
One plant at Clinton, Ind.  
Alton Brick Company, Alton, Ill.  
One plant at Alton, Ill.  
Deckman-Duty Brick Co., Cleveland, Ohio.  
One plant at Cleveland, Ohio.  
One plant at Carrollton, Ohio.  
One plant at Malvern, Ohio.  
Tuna Valley Pressed Brick Co., Bradford, Pa.  
One plant at Bradford, Pa.

Foster Paving Block Co., Bradford, Pa.  
One plant at Bradford, Pa.  
One plant at Youngsville, Pa.  
One plant at Binghamton, N. Y.  
Metropolitan Paving Brick Co., Canton, Ohio.  
Four plants at Canton, Ohio.  
One plant at Willow, Ohio.  
Bessemer Limestone Co., Youngstown, Ohio.  
Three plants at Bessemer, Pa.  
Peebles Paving Brick Co., Portsmouth, Ohio.  
Two plants at Portsmouth, Ohio.  
One plant at Firebrick, Ky.  
The Murphysboro Paving Brick Co., Murphysboro, Ill.  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
One plant at Robbins, Tenn.  
One plant at Coaldale, Ala.  
McAvoy Vitrified Brick Co., Philadelphia, Pa.  
One plant at Perkiomen Junction, Pa.

Windsor Brick Company, Akron, Ohio.  
One plant at Akron, Ohio.  
Hocking Valley Brick Co., Columbus, Ohio.  
One plant at Logan, Ohio.  
Veederburg Paver Co., Veederburg, Ind.  
One plant at Veederburg, Ind.  
Springfield Paving Brick Co., Springfield, Ill.  
One plant at Springfield, Ill.  
Terre Haute Vitreified Brick Co., Terre Haute, Ind.  
One plant at Terre Haute, Ind.  
Albion Vitreified Brick Co., Albion, Ill.  
Alliance Clay Products Co., Alliance, Ohio.  
Westport Paving Brick Co., Baltimore, Md.  
Plant at Westport, Baltimore.  
Mack Manufacturing Co., New Cumberland, W. Va.  
Four plants at New Cumberland, W. Va.  
The Hydraulic-Press Brick Company, St. Louis, Mo.  
One plant at St. Louis, Mo.



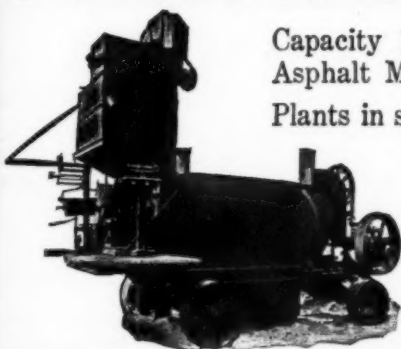
# PAVING BRICK

WIRE CUT LUG      DUNN PATENT  
AND  
REPRESED

**Southern Clay Manufacturing Co.**  
CHATTANOOGA, TENN.

Three Plants      Capacity, 30,000,000

## Cummer Road Asphalt Plant



Capacity 1000 yds. 2" top or  
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Plants in stock.

Make test before  
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Cummer one-car  
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ity plants in stock.

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Highways in  
Good Condition  
at Small Cost**



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Solvay Granulated Calcium Chloride prevents the raveling and rutting of roads by speeding autos and heavy wagons. Absorbing moisture from the air, it acts as a perfect binder and dust layer during even the hottest weather.

The road always has a slightly moist appearance, is clean, firm and cool, when treated with

## SOLVAY Granulated Calcium Chloride

Solvay is not washed off by rain; nor does it form a waterproof surface-shell, permitting dry-rot underneath, because it sinks into and becomes a part of the road within a few hours after application.

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Five Points, Durham, N. C. Roads made with  
Standard Asphalt Binder "C."

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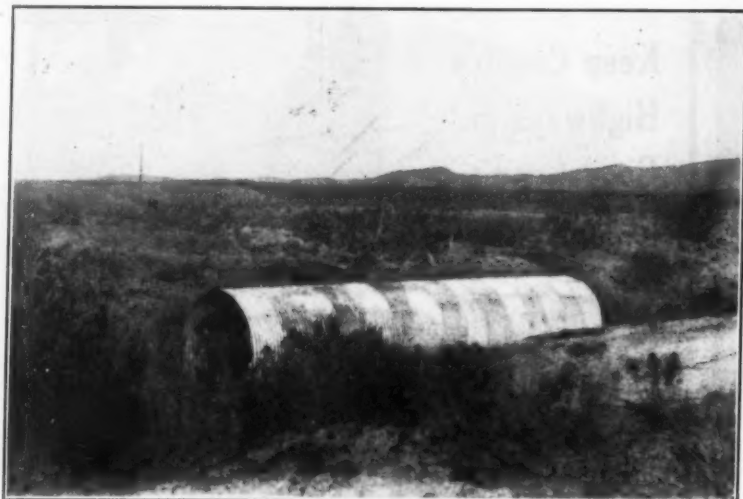
ASPHALT  
BINDER "C"

Write for booklet and prices.

**STANDARD OIL COMPANY**  
(NEW JERSEY)

Newark, N. J.

Baltimore Md.



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The illustration shows a 72" diameter, 12-gauge Armco Culvert which is being installed in Box Elder County, Utah, at a point forty miles from the nearest railroad station.

# ARMCO AMERICAN INGOT IRON CULVERTS

are Convenient to handle and install, Strong and reliable, and *Lasting*, because of the unequalled purity and evenness of their material.

For full information on Armco Corrugated Culverts (Full and Part Circle), Siphons, Sheets, Roofing and Formed Products, write

## Armco Culvert Publicity Bureau

CINCINNATI



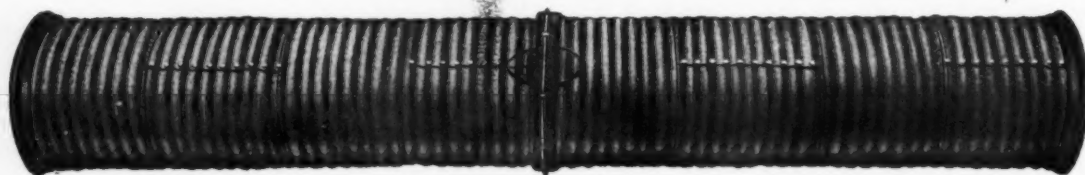
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GOOD CULVERTS

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QUALITY in Corrugated Culverts means Permanence in Business. THAT'S WHY we put QUALITY in our Culverts. Analysis of Metal yours for the asking.



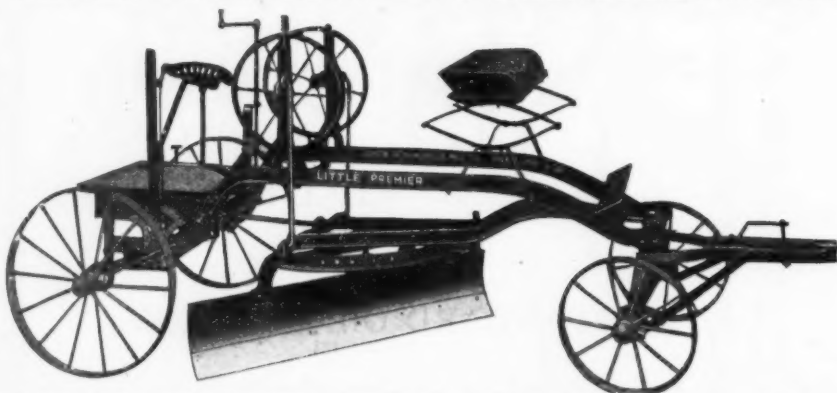
The Salisbury Culvert is constructed in the strongest possible manner, and will outlast any other culvert on the market.

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SALISBURY NORTH CAROLINA

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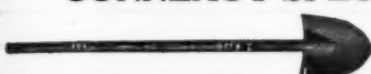
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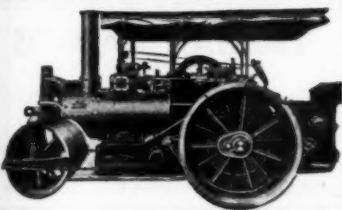
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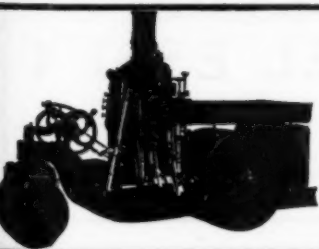
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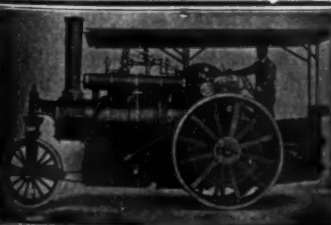


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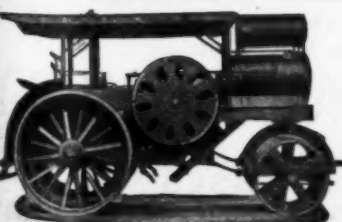
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Saves money for the contractor.

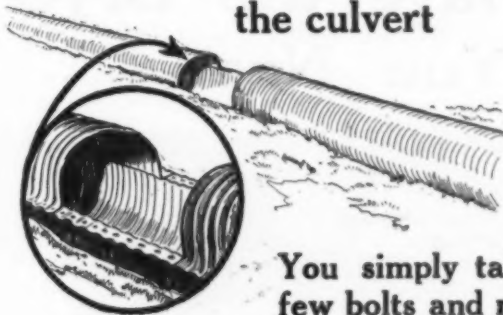
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Triangle Brand on Every Sheet  
This Triangle Trade-Mark is  
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BEST TESTERS AND MOST DURABLE

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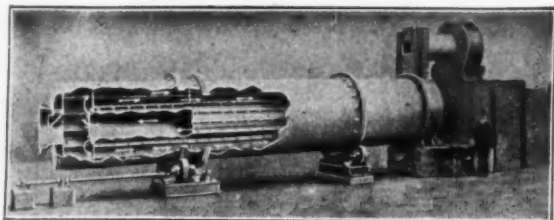
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GOLD MEDALS:

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Manufacturers Record, - - - Baltimore, Md.



### Cottonseed Oil Machinery Linseed Oil Machinery

Hydraulic Presses  
Hydraulic Pumps  
Cake Formers Meal Cookers  
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Complete Equipment Latest and Best Improvements

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### COTTON SEED OIL MILLS

are not installing the ANDERSON OIL EXPELLER without good reason. It makes better oil and better cake at less cost than other machinery Works whole seed or meats only. Let us explain.



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Pneumatic Seed Cleaners.  
Automatic Linters.  
Ball Bearing Automatic Hullers.  
Steel Frame Shakers.  
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Automatic Steam Cake Formers.  
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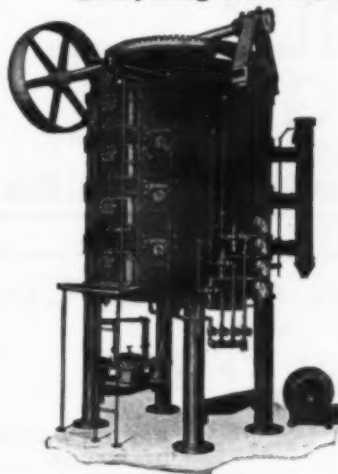
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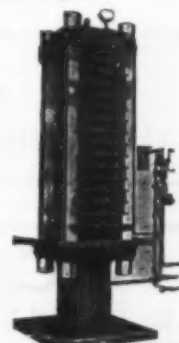
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## Steel Castings

Weighing from 1 lb. to 300 lbs. each

Suitable for Dogs, Clamps, Wheels, Pinions and other castings  
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Used almost exclusively for Automobile Work.

Quick deliveries.

Your inquiries solicited.

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## Malleable Iron Castings of Highest Quality

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Castings of all descriptions furnished.

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"SALAMANDRINE" STEEL POTS  
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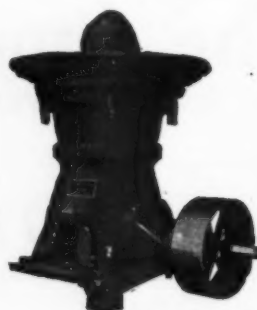
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**MALLEABLE IRON  
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**THE MARION MALLEABLE IRON WORKS**  
MARION, INDIANA

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We make a Specialty of Castings of All Kinds



## McCully Gyratory Rock Crusher has:

Shaft suspended at point of least gyration.  
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The simplest construction.  
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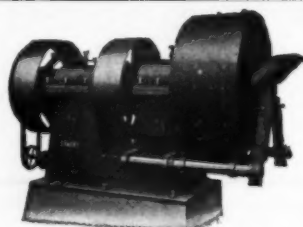
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M248.1



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Patented

## EVENTUALLY SYMONS DISC CRUSHERS

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Made in four sizes.

Capacities, 5 to 120 tons per hour.

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Are fully described in our  
new CATALOG, which we send

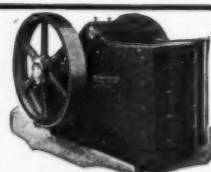
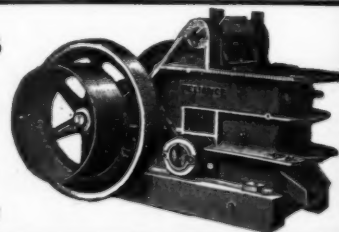
FREE

**Universal Road Machinery Co.**

KINGSTON, N. Y.

ROCHESTER

BOSTON



**Buchanan All-Steel Crushers** Crushing Rolls Magnetic Separators

Crushing Plants complete in all details from  
100 to 5000 tons daily capacity.

**C. G. BUCHANAN CO., Incorporated**

Main Office—90 West Street, New York, N. Y.  
Branch—1218 Chestnut Street, Philadelphia, Pa.

REPRESENTATIVE:

Chas. T. Topping Machy. Co., Bessemer Bldg., Pittsburgh, Pa.

## Complete Plants for Washing and Preparing Hematite Ores and Phosphate Rock

WASHERS, Wood or Steel Logs. ORE JIGS for Hard Service. ELEVATORS,  
All Steel. CONVEYORS, All Steel. REVOLVING SCREENS of All Kinds.

CATALOGUE FOR THE ASKING.

McLANAHAN-STONE MACHINE CO.

HOLLIDAYSBURG, PA.

## A BOOK about MACHINERY for GRINDING and SEPARATING FREE

It fully catalogues the Raymond Pulverizing and Air Separating System, yet it is a  
good deal more than a catalogue, and is full of information valuable to any company  
which reduces any material to powder. Ask for a copy.

RAYMOND BROS. IMPACT PULVERIZER COMPANY

1304 North Branch Street, Chicago, Ill.

## MALLEABLE IRON CASTINGS

High Tensile Strength Exceedingly Tough  
We are equipped to make large and small castings.

Prompt Shipment Our Specialty

WRITE US.

**GENERAL MALLEABLE COMPANY, Warren, Ohio**



# OPPORTUNITIES IN THE SOUTH

— FOR —

## Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material unbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

### THE WEST POINT ROUTE

#### Atlanta & West Point Railroad

THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for

Truck, Fruit, Stock and General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities

Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.

### Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

#### Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

To the

### MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

#### Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

**J. M. MALLORY, Industrial Agent**  
SAVANNAH, GEORGIA

### Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the  
Illinois Central Railroad

### ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA

IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI

FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

**J. C. CLAIR**

Industrial and Immigration Commissioner

**ILLINOIS CENTRAL RAILROAD COMPANY**

135 East 11th Place, CHICAGO, ILL.

**Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina,  
South Carolina, Tennessee, Virginia, Southern Illinois, Southern Indiana**

## What We Offer You

**T**HERE are millions of acres of the most productive farm, pasture and orchard lands in the South offering distinct advantages to homeseekers. Good farmers can make more money in the South from the labor and capital invested than elsewhere in America. Careful investigation will prove this and also that the most pleasant, healthful home conditions are in this section. One can find no better region for dairying, or for poultry and live stock raising. Abundant grasses and forage plants, pure water, the long grazing seasons, the low cost of production and the good markets make the South unequalled today in opportunities for these industries. Nearly all authorities who have studied the situation agree that this is so. For fruit and truck raising, for general or special farming, there are all conditions for success. Lands in good locations are to be had at lowest prices for equally productive lands anywhere.

The South not only offers the opportunity for farm homeseekers, but needs them. The Southern Railway Lines want settlers in their territory who can turn the available lands into highly productive places to furnish the foodstuffs necessary for the South itself and to take advantage of the outside markets which may be supplied. They are anxious to build up their territory as part of their efforts to make their own properties more productive.

For this reason their Industrial and Agricultural Department is maintained. Its co-operation is offered in every way possible to the homeseeker who will investigate the opportunities of the South; every assistance is extended which will enable him to find the location where are the home conditions he desires and which will give him prosperity. Immigration agents will advise with him. The information about lands, crops and the various sections and conditions along the roads, carefully collected by the companies, is at his command. Careful attention will be given to secure for him the special information desired on particular subjects or localities. Booklets and other printed matter will be sent on application.

After the homeseeker is located, trained and practical agricultural field agents, live stock, dairy and poultry agents familiar with local conditions will be at his service in solving any of the problems which his new location may bring. Market agents will help him to find the best market for his products.

What we do for the homeseeker, we also do for the manufacturer looking for a location for his plant. Industrial agents will help him solve the questions as to the proper point where raw materials may be satisfactorily assembled; where labor, power, transportation and market conditions are best; where necessary lands are properly located and to be had; where local capital, if wanted, will join in building the plant, and where all the other conditions which help to make the success of the industry and the welfare of its labor are to be found.

We offer our services in behalf of a territory reached by nearly 10,000 miles of railway, the people of that territory and a company which is earnestly at work in co-operation with every person or interest affected to build up the territory and advance the fortunes of those who are developing the lands and the many opportunities in the South.

Southern Railway  
Southern Railway in Mississippi  
Mobile & Ohio Railroad  
Georgia Southern & Florida Ry.  
Virginia & Southwestern Ry.  
Augusta Southern Railroad

**M. V. RICHARDS**  
Industrial and Agricultural Commissioner  
WASHINGTON, D. C.

Danville & Western Railway  
Tallulah Falls Railway  
Blue Ridge Railway  
Hawkinsville & Fla. South'n. Ry.  
Macon & Birmingham Railway  
Northern Alabama Railway



# Splendid Openings for Woodworking Plants Along the Clinchfield Route

The Clinchfield penetrates a portion of the Appalachian South that is rich in virgin hardwoods.

All along its line, extending for 240 miles through Southwest Virginia, Eastern Tennessee and Western North Carolina, there are extensive tracts of timber that have not been touched, and which contain some of the finest varieties of hardwoods that remain in the country.

Heretofore inaccessible, as no railroad penetrated this country before the Clinchfield was built, these valuable timber tracts are now available for the establishment of woodworking plants.

And every requirement for manufacture—labor, cheap power and excellent shipping facilities—is waiting those who will take advantage of the splendid openings for factories to make products of many different kinds.

The trend of manufacture of articles from hardwoods must, from the economic desirability of getting close to the base of supply, be toward the Appalachian South, because, according to the U. S. Forestry Bureau, the bulk of hardwoods remaining in the country is in that section.

It would unquestionably be good business policy to carefully consider these facts.



*Our expert timber cruisers have gathered valuable data covering the forests in our territory, and to those seriously interested this will be gladly furnished.*

## Carolina, Clinchfield & Ohio Rwy.

**"THE ROAD OF OPPORTUNITY"**

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

# "LIVE STOCK FARMING IN FLORIDA"

Under the above title we have just completed an interesting, illustrated booklet, the purpose of which is to aid in the development of Florida's unparalleled agricultural resources.

After years of careful observation and investigation we have become convinced that the live stock industry is the correct basis upon which to create in Florida one of the greatest agricultural States in the Union.

In making this statement it is not intended to minimize the wonderful advantages and opportunities Florida offers to the fruit grower and truck gardener. On the contrary, Florida's growth as a live stock State will mean a corresponding growth of the trucking and fruit-growing interests. It means a vast increase in capital for the general development of the State, besides the greater fertility of the soil that will result.

This new booklet not only tells how Florida is adapted for live stock raising, but also points out the reasons for this, and gives examples of successful work in this line.

It also deals with the possibilities of dairying, hog and sheep raising and the opportunities for successful poultry raising.

The information given is authentic. It comes from some of the best authorities in the country, both in and out of Florida. The facts as presented will prove convincing to the live stock farmer wherever he may be found that the live stock business in Florida will yield as great or greater profits than he has ever before received.

The time to engage in the live stock industry in Florida is at hand.

*Copies of "Live Stock Farming in Florida" will be gladly mailed to those desiring to investigate this opportunity.*

## FLORIDA EAST COAST RAILWAY

(FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.



# HOMESEEEKERS' RATES FOR 1915

## Seaboard Air Line Railway

The Progressive Railway of the South

Announces the establishment of attractive Round-Trip Homeseekers' Rates to Progressive Florida.

TO	FROM	
	WASHINGTON, D. C.	CINCINNATI, OHIO
	January 12th, February 9th and FIRST and THIRD TUESDAYS in each succeeding month.	January 5th and 19th and FIRST and THIRD TUESDAYS in each succeeding month.
	TICKETS GOOD FOR 21 DAYS	
NORTH FLORIDA		
Lake City	\$22.65	\$27.10
Quincy	24.55	25.60
Tallahassee	24.45	25.60
THE BEAUTIFUL LAKE COUNTRY		
Ocala	25.00	30.00
Orlando	25.00	30.00
Oviedo	25.00	30.00
Leesburg	25.00	30.00
Tavares	25.00	30.00
POLK COUNTY HIGHLANDS		
Bartow	25.00	30.00
PEERLESS PINELLAS		
St. Petersburg, Clearwater, Tarpon Springs, Elfers via Tampa	25.00	30.00
THE FAMOUS MANATEE COUNTY		
Palmetto, Parrish, Terra Ceia Manatee, Bradentown, Bee Ridge Oneco, Sarasota Venice	25.00	30.00
TAMPA, PLANT CITY	25.00	30.00

These tickets will be on sale at Washington, D. C., January 12th and February 9th, and two dates in each month thereafter. At Cincinnati on January 5th and 19th, and two dates in each succeeding month—the FIRST and THIRD TUESDAYS—good for 21 days. You can stop at Jacksonville, Florida's greatest city. It will repay you. Stopovers also south of Jacksonville going and returning.

The rates and service from The Nation's Capital, WASHINGTON, offers splendid opportunity to the people from the Eastern States to make a Florida trip cheaply and comfortably.

The CINCINNATI rates offer a similar opportunity to the people of the Central States.

You can find attractive openings in the progressive State of Florida. We shall be glad to answer your inquiry for complete information.

## SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

## CLASSIFIED INDEX OF ADVERTISEMENTS.

- Abrasive Materials.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**  
Baltimore Audit Co., Baltimore, Md.  
Black & Co., Baltimore, Md.
- Accumulator. (Hydraulic.)**  
The French Oil Mill Mch. Co., Piqua, Ohio.
- Acetylene Service.**  
Prest-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**  
Burroughs Adding Machine Co., Detroit, Mich.
- Agricultural Implements.**  
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Clayton Air Compressor Works, Cambridge, Mass.  
De La Vergne Machine Co., New York, N. Y.  
General Electric Co., Schenectady, N. Y.  
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.  
Sullivan Mch. Co., Chicago, Ill.
- Aluminum Products. (Bars, Sheets, Tubes.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**  
Frick Co., The, Waynesboro, Pa.  
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**  
Bailey Leiby Co., Charleston, S. C.
- Architects.**  
Diehl, Wm. Newton, Norfolk, Va.  
Gatlin, W. R., Hopkinsville, Ky.  
Milburn, Helster & Co., Washington, D. C.  
Sirtine, J. E., Greenville, S. C.
- Architects' Supplies.**  
Starrett Co., L. S., Athol, Mass.  
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron Work.**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Dietrich Brothers, Baltimore, Md.  
Schreiber & Sons Co., The, Cincinnati, O.  
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**  
Bluswanger & Co., Memphis, Tenn.
- Asbestos.**  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
John-Manville Co., H. W., New York, N. Y.
- Asphalt.**  
Gulf Refining Co., Pittsburg, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**  
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**  
Gummer & Son Co., F. D., The, Cleveland, Ohio.
- Automobile. (Gasoline Passenger.)**  
White Co., The, Cleveland, Ohio.
- Automobiles. (Second Hand.)**  
Mar-Dei Mobile Co., Baltimore, Md.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbit Metal. [See Anti-Friction Metal.]**
- Ballast. (Railroad.)**  
American Ballast Co., Knoxville, Tenn.  
Bald Mountain Quarry, Newson, N. C.  
Chicamunga Quarry & Const. Co., Chattanooga, Tenn.
- Bankers and Brokers.**  
Delaware Trust Co., Wilmington, Del.  
Edwards, Geo. B., New York, N. Y.  
Electric Bond & Share Co., New York, N. Y.  
Halsey & Co., N. W., New York, N. Y.  
Mercantile Trust & Deposit Co., Baltimore, Md.  
New First National Bank, Columbus, O.  
Nuveen & Co., John, Chicago, Ill.  
Peabody, Houghteling & Co., Chicago, Ill.  
Powell, Garard & Co., Chicago, Ill.  
Provident Savings Bank & Trust Co., Cincinnati, O.  
Southern States Development Co., New York, N. Y.
- Banks.**  
First Nat'l Bank, of Key West, Key West, Fla.  
First National Bank, Richmond, Va.  
Merchant-Mechanics' Nat'l Bank, Baltimore, Md.  
New First National Bank, Columbus, Ohio.  
National Exchange Bank, Baltimore, Md.  
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Iron Fence Co., Cincinnati, Ohio.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.  
Meyers Mfg. Co., F. J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**  
American Bridge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**  
Bourne-Fuller Co., The, Cleveland, Ohio.  
Carnegie Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars. (Steel, Rounds, Flats and Squares.)**  
Gulf States Steel Co., Birmingham, Ala.  
Pardee Works, O., Perth Amboy, N. J.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Corrugated Bar Co., Buffalo, N. Y.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Laclede Steel Co., St. Louis, Mo.
- Bearings. (Oilless.)**  
Metalline Co., Long Island City, N. Y.
- Bedford Stone**  
Bedford Steam Stone Works, Bedford, Ind.
- Belting. (Leather, Canvas, Rubber.)**  
American Supply Co., Providence, R. I.  
Bailey-Leiby Co., Charleston, S. C.  
Baltimore Belting Co., Baltimore, Md.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Belting Co., Baltimore, Md.  
Druid Oak Belting Co., Inc., Baltimore, Md.  
Frederick Belting Co., St. Louis, Mo.  
Gandy Belting Co., Baltimore, Md.  
Graton & Knight Mfg. Co., Worcester, Mass.  
Main Belting Co., Phila., Pa.  
Schieren Co., Ohio, N. Y.  
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicotown, (Philadelphia) Pa.
- Belt Cement.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**  
Jeffery Mfg. Co., Columbus, O.
- Belt Dressing.**  
Dixon Crucible Co., Joseph, Jersey City, N. J.  
Gandy Belting Co., Baltimore, Md.  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. [See Belting. Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**  
Church & Dwight Co., New York, N. Y.
- Billets. (Basic Open Hearth Quality.)**  
Gulf States Steel Co., Birmingham, Ala.
- Bins (Steel)**  
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**  
East Bangor Const. Slate Co., The, East Bangor, Pa.  
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Grooved.)**  
American Concrete Works, New Orleans, La.
- Block Fillers**  
Barrett Mfg. Co., Phila., Pa.  
Standard Oil Co., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
General Electric Co., Schenectady, N. Y.  
Green Fuel Economiser Co., Matineawan, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Blueprinters.**  
Childrey Co., Richmond, Va.
- Boilers.**  
Babcock & Wilcox Co., New York, N. Y.  
Bailey & James Boiler & Mch. Co., Joplin, Mo.  
Cameron & Barkley Co., Charleston, S. C.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Cottrellville Boiler Works, Cottrellville, Pa.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Harris Bros. Co., Chicago, Ill.  
Hartley Boiler Works, Montgomery, Ala.  
Keebler Co., E., Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
Lombard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works, Burlington, Ia.  
Phoenix Iron Works Co., Meadville, Pa.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Vogt Machine Co., Henry, Louisville, Ky.  
Walsh & Weidner Boiler Co., Chattanooga, Tenn.  
Zelicker Supply Co., Walter, A., St. Louis, Mo.
- Boiler Covering.**  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**  
Progressive Mfg. Co., Torrington, Conn.  
Republic Iron & Steel Co., Youngstown, O.  
Upson Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**  
Fidelity & Deposit Co. of Balto., Baltimore, Md.
- Bottling Outfits.**  
Viller Mfg. Co., Milwaukee, Wis.
- Brass Goods.**  
Bailey-Leiby Co., Charleston, S. C.  
Buckeye Iron & Brass Works, Dayton, O.  
Lunkenheimer Co., The, Cincinnati, Ohio.  
Powell Co., Wm., Cincinnati, O.
- Brass Railing and Grilles.**  
Newman Mfg. Co., Cincinnati, Ohio
- Brewers' Machinery.**  
Viller Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**  
Hood Brick Co., B. Mifflin, Atlanta, Ga.
- Brick. (Building.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.  
Hood Brick Co., B. Mifflin, Atlanta, Ga.  
Hydraulic Press Brick Co., St. Louis, Mo.  
Kingsport Brick Corp., Johnson City, Tenn.  
Scott Brick Co., Alex. A., Knoxville, Tenn.  
Stanford Brick Co., Macon, Ga.
- Brick. (Enamelled.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**  
Killian Fireproofing & Brick Works, Killian, S. O.  
Louisville Fire Brick Works, Highland Park, Ky.  
Mexico Brick & Fire Clay Co., Mexico, Mo.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Standard Brick Co., Macon, Ga.  
Stevens' Sons Co., H., Macon, Ga.  
Union Mining Co., Mt. Savage, Md.
- Brick. (Paving.)**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingis Shale Brick Co., Birmingham, Ala.  
Dunn Wire-Clay Brick Co., Conestoga, Ohio.  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
Standard Brick Co., Macon, Ga.
- Brick and Clayworking Machinery and Supplies.**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Fernholm Brick Machinery Co., St. Louis, Mo.  
Freese & Co., E. M., Galton, O.  
Steele & Sons, J. O., Statesville, N. C.
- Bridges. (Concrete.)**  
Cunningham Construction Co., Shreveport, La.  
Luten, Daniel B., Indianapolis, Ind.  
Requarth Co., O. W., Charlotte, N. C.  
Turner, O. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**  
American Bridge Co. of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Case Crane & Engineering Co., Columbus, Ohio.  
Champion Bridge Co., Wilmington, Ohio.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cunningham Construction Co., Shreveport, La.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Richmond Structural Steel Co., Richmond, Va.  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**  
Chattanooga Paint Co., Chattanooga, Tenn.
- Bridge Builders. (Timber.)**  
Murray & Co., Inc., W. D., Norfolk, Va.
- Brimstone.**  
Union Sulphur Co., New York, N. Y.
- Buckets. (Clam Shell.)**  
Hayward Company, New York, N. Y.  
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Orange Peel.)**  
Hayward Co., The, New York, N. Y.
- Buckets. (Dredging, Excavating, Sewer, etc.)**  
Hayward Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**  
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Hayward Co., New York, N. Y.  
Link-Belt Co., Nicotown (Philadelphia), Pa.  
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**  
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**  
Interstate Const. Co., Louisville, Ky.  
Stone & Webster Eng. Corp., Boston, Mass.  
Turner, O. A. P., Minneapolis, Minn.  
White Companies, J. G., New York, N. Y.
- Building Stone**  
Atlantic Stone Co., Atlanta, Ga.  
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**  
Harris Bros. Co., Chicago, Ill.  
Southern Building Material Co., Norfolk, Va.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**  
Metalline Co., Long Island City, N. Y.
- Cables.**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Roebling's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**  
American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**  
Amburn Co. (Tramway Department, New York, N. Y.)  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Lidgerwood Mfg. Co., New York, N. Y.  
Roebling's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Max Am Machine Co., Mt. Vernon, N. Y.
- Canning Machinery and Supplies.**  
Robins & Co., A. E., Baltimore, Md.  
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**  
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**  
Austin Mfg. Co., Chicago, Ill.  
Chase Fdry. & Mfg. Co., Columbus, O.  
Curd, Geo., Cincinnati, Ohio.  
Electric Wheel Co., Quincy, Ill.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Western Wheel Scraper Co., Aurora, Ill.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Unloaders.**  
Bonney Supply Co., Rochester, N. Y.
- Car Wheels, Axles and Trucks.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. (See Pipe.) [Cast Iron.]**
- Castings. (Aluminum.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**  
McKenna Bros. Brass Co., Pittsburgh, Pa.  
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**  
Columbian Iron Works, Chattanooga, Tenn.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hammorgan Pipe & Foundry Co., Lynchburg, Va.  
Hull's Sons, D. F., Hagerstown, Md.  
Lynchburg Foundry Co., Lynchburg, Va.  
Phoenix Iron Works Co., Meadville, Pa.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**  
Columbus Malleable Iron Co., Columbus, Ohio.  
General Malleable Co., Warren, O.  
Phoenix Malleable Iron Works, The, Marion, Ind.  
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Riverside Steel Casting Co., Newark, N. J.
- Ceatings. (Metal.)**  
Edwards Manufacturing Co., Cincinnati, O.  
Keighley Metal Oil, & Mfg. Co., S., Pittsburgh, Pa.
- Cement.**  
Climchfield Portland Cem. Corp., Kingsport, Tenn.  
Dixie Portland Cement Co., Chattanooga, Tenn.  
Hartranft Cement Co., Wm. G., Philadelphia, Pa.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Kosmos Portland Cement Co., Inc., Louisville, Ky.  
Lehigh Portland Cement Co., Allentown, Pa.  
Southern States Portland Cem. Co., Rockmart, Ga.  
Standard Portland Cement Co., Leeds, Ala.
- Cement Machinery.**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Power & Mining Machinery Co., Cudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Chains. (Dredge, Quarry, Steam Shovel.)**  
Welmer Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**  
Davis, Geo. C., Philadelphia, Pa.  
Froehling & Robertson, Richmond, Va.  
Hunt & Co., Robt. W., Chicago, Ill.  
Little Inc., A. D., Boston, Mass.  
Pittsburgh Testing Laboratory, Pittsburgh, Pa.  
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**  
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**  
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agriculture and Commercial Opportunities.]**
- Clamps. (For Concrete Forms.)**  
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. [See Brick and Clayworking Machinery and Supplies.]**
- Cleansing Compound. (Floors, Etc.)**  
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**  
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**  
Affiliated Manufacturers Co., Milwaukee, Wis.  
Medart Patent Pulley Co., St. Louis, Mo.  
Moore & White Co., The, Philadelphia, Pa.
- Coal.**  
Climchfield Coal Corp., Dante, Va.  
Climchfield Fuel Co., Spartanburg, S. C.  
Consolidation Coal Co., Inc., New York, N. Y.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Coal Cutters.**  
Jeffery Mfg. Co., Columbus, O.
- Coal Handling Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Guarantee Construction Co., New York, N. Y.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicotown (Philadelphia), Pa.  
Weller Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Coal Tippers.**  
American Bridge Co. of New York, N. Y.
- Coke.**  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Cold Store Doors.**  
Brecht Co., The, St. Louis, Mo.
- Collections.**  
Craig Mercantile Agency, Houston, Texas.
- Colleges and Schools.**  
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**  
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**  
Nickerson Mfg. Co., Knoxville, Tenn.
- Commission Merchants. (Export & Import.)**  
Duckett & Co., Inc., A. W., New York, N. Y.
- Concrete Construction. (Reinforced.)**  
Berry-Fortune Construction Co., Kalamazoo, Ga.  
Corrugated Bar Co., Buffalo, N. Y.  
Cunningham Construction Co., Shreveport, La.  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Jeffery Mfg. Co., Columbus, O.  
Requarth Co., O. W., Charlotte, N. C.  
Turner, O. A. P., Minneapolis, Minn.
- Concrete Curb Protector. (Steel.)**  
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. [See Mixers. (Concrete)]**
- Concrete Reinforcing Bars.**  
Bourne-Fuller Co., The, Cleveland, O.  
Carnegie Steel Co., Pittsburgh, Pa.  
Corrugated Bar Co., Buffalo, N. Y.  
Dietrich Brothers, Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Hoffman & Co., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Laclede Steel Co., St. Louis, Mo.  
Pardee Works, O., Perth Amboy, N. J.  
Republic Iron & Steel Co., Youngstown, O.  
Sweets Steel Co., Williamsport, Pa.
- Concrete Reinforcing Bar Couplings.**  
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric.**  
American Steel & Wire Co., Chicago, Ill.  
Roebling's Sons Co., John A., Trenton, N. J.
- Condensers.**  
Alberger Pump & Condenser Co., New York, N. Y.  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Cresson-Morris Co., Philadelphia, Pa.  
Dean Bros., Steam Pump Wks., Indianapolis, Ind.  
Westinghouse Machine Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.
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Edwards Mfg. Co., Cincinnati, O.
- Conduits. (Electrical.)**  
National Metal Molding Co., Pittsburgh, Pa.
- Conduits. (Interior)**  
National Metal Molding Co., Pittsburgh, Pa.
- Conduits. (Steel.)**  
National Metal Molding Co., Pittsburgh, Pa.
- Conduit Fittings.**  
National Metal Molding Co., Pittsburgh, Pa.
- Contractors. (Concrete.)**  
Berry-Fortune Construction Co., Kalamazoo, Ga.



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Clevens, Harry, Washington, D. C.  
Tucker & Laxton, Charlotte, N. C.

## MINING.

Brown & Clarkson, Washington, D. C.  
Grimesley, G. F., Martinsburg, W. Va.  
Hogue Engineering Ass'n, Charleston, W. Va.  
Jones, E. M., Chattanooga, Tenn.  
Renshaw & Breese, Huntington, W. Va.

## MUNICIPAL.

Anderson & Christie, Charlotte, N. C.  
Brown & Clarkson, Washington, D. C.  
Crosby, Walter W., Baltimore, Md.  
Dabney Engineering Co., Memphis, Tenn.  
Elrod, Henry E., Dallas, Texas.  
Graves Engineering Co., Inc., New York, N. Y.  
Greiner & Whitman, Baltimore, Md.  
Havely, H. B., Monroe, N. C.  
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Knowles, Morris, Pittsburgh, Pa.  
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McCrory Co., J. H., Atlanta, Ga.  
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Walker Engineering Corp., Tampa, Fla.  
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Anderson & Christie, Charlotte, N. C.  
Atlantic Engineering Co., Savannah, Ga.  
Crosby, Walter W., Baltimore, Md.  
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## PUBLIC SERVICE PROPERTIES.

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Ferree Co., The, H. G., Memphis, Tenn.  
Ford, Bacon & Davis, New York, N. Y.  
Gillman, Harry L., Boston, Mass.  
Graves Engineering Co., Inc., New York, N. Y.  
Scott Engineering Co., Philadelphia, Pa.  
Stone & Webster Engr. Corp., Boston, Mass.  
Weller, Francis R., Washington, D. C.  
White Companies, J. G., New York, N. Y.

## REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Cunningham Construction Co., Shreveport, La.  
Foster-Craigton-Gould Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Interstate Const. Co., Louisville, Ky.  
Luten, Daniel H., Indianapolis, Ind.  
Martin Co., A. J., Portsmouth, Ohio.  
Potter, Alexander, New York, N. Y.  
Requarth Co., O. W., Charlotte, N. C.  
Savannah Eng. & Construction Co., Savannah, Ga.  
Spiker, William O., Atlanta, Ga.  
Tucker & Laxton, Charlotte, N. C.  
White Companies, J. G., New York, N. Y.

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Gillman, Harry L., Boston, Mass.

## SEWERAGE AND WATER-WORKS.

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Brown & Clarkson, Washington, D. C.  
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Ford, Bacon & Davis, New York, N. Y.  
Graves Engineering Co., Inc., New York, N. Y.  
Greiner & Whitman, Baltimore, Md.  
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Hill, Nicholas S., Jr., and S. F. Ferguson, New York, N. Y.  
Knowles, Morris, Pittsburgh, Pa.  
Mayer, J. H., Birmingham, Ala.  
Miller, Hiram Allen, Boston, Mass.  
Myers, E. W., Greensboro, N. C.  
Pew, Arthur, Atlanta, Ga.  
Potter, Alexander, New York, N. Y.  
Quick, Alfred M., Baltimore, Md.  
Stevens, Harry, Washington, D. C.  
Walker Engineering Corp., Tampa, Fla.  
White Companies, J. G., New York, N. Y.  
White, Gilbert O., Charlotte, N. C.

## STEEL WORK AND ROLLING MILLS.

Smythe Co., The, S. R., Pittsburgh, Pa.

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Foster-Craigton-Gould Co., Nashville, Tenn.  
Shearer, O. E., Memphis, Tenn.  
Spiker, Wm. C., Atlanta, Ga.  
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## THEATRE CONSTRUCTION.

Gatlin, W. R., Hopkinsville, Ky.

## Engines.

## COMPOUNDED AIR.

Duke Engine Co., Grand Haven, Mich.

## GAS AND GASOLINE.

Affiliated Manufacturers Co., Milwaukee, Wis.  
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.  
Cooper Co., O. & G., Mt. Vernon, O.  
De La Vergne Machine Co., New York, N. Y.  
Gas Engineering Co., Trenton, N. J.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Mills, A., New York, N. Y.  
Portsmouth Engine Co., Portsmouth, O.  
Power Mfg. Co., Lima, Ohio.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Van Dusen, R. O., The, Columbus, O.  
Westinghouse Machine Co., The, Pittsburgh, Pa.

## OIL.

Bolinders Co., New York, N. Y.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
De La Vergne Machine Co., New York, N. Y.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Meitz, A., New York, N. Y.  
Moore & Sons Corp., Sam. L., Elizabethport, N. J.  
Power Mfg. Co., Lima, Ohio.  
Snow Steam Pump Works, The, New York, N. Y.

## STEAM.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.  
Ball Engine Co., Erie, Pa.  
Buffalo Forge Co., Buffalo, N. Y.  
Cameron & Barker, Charleston, S. C.  
Cooper Co., O. & G., Mt. Vernon, O.  
Duke Engine Co., Grand Haven, Mich.  
Engberg Electric & Mechanical Works, St. Joseph, Mo.  
Gibbs Machinery Co., Inc., Columbus, S. C.  
Griffith & Wedge Co., The, Zanesville, O.  
Harris Bros. Co., Chicago, Ill.  
Houston, Stanwood & Gamble Co., Cincinnati, O.  
Lefel & Co., James, Springfield, O.  
Lombard Iron Works, Augusta, Ga.  
MacKenzie Iron Works, Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Phoenix Iron Works Co., Meadville, Pa.  
Schaffel Iron Works, Macon, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Viller Mfg. Co., Milwaukee, Wis.  
Westinghouse Machine Co., Pittsburgh, Pa.

## Envelopes.

Young & Selden Co., Baltimore, Md.

## Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.  
American Steel Dredge Co., Fort Wayne, Ind.  
Bay City Dredge Works, Bay City, Mich.  
Byers Mach. Co., The, John F., Ravenna, O.  
Economy Excavator Co., Iowa Falls, Iowa.  
Fairbanks Steam Shovel Co., Marion, O.  
Hayward Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Keystone Drill & Equipment Co., Beaver Falls, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Marion Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
National Hoisting Engine Co., Harrison, N. J.  
The Automatic Shovel Co., Lorain, Ohio.  
Williams Co., The, G. H., Cleveland, O.

## Excavators. (Trench.)

Bay City Dredge Works, Bay City, Mich.  
Economy Excavator Co., Iowa Falls, Iowa.  
Fairbanks Steam Shovel Co., Marion, O.  
Hayward Co., The, New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.

## Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

## Exhaust Heads.

American Spiral Pipe Works, Chicago, Ill.

## Exhibits. (Machinery Builders' Equipment and Supplies.)

Builders' Exchange, Baltimore, Md.

## Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

## Expansion Joints. (Street and Road.)

Phillip Carey Co., The, Cincinnati, Ohio.

## Expanded Metal. [See Lath.]

## Explosives.

Du Pont De Nemours Powder Co., E. I., Wilmington, Del.  
Keystone Nat'l. Powder Co., Emporium, Pa.

## Export Agents. (South America.)

Lutz, Friedr. W., Richmond, Va.

## Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

## Fans. (Electric.)

General Electric Co., Schenectady, N. Y.

## Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

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## Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.  
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Stewart Heater Co., Buffalo, N. Y.

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American Steel & Wire Co., Chicago, Ill.  
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## Fencing, Entrance Gates. (Iron, Steel, Wire.)

American Steel & Wire Co., Chicago, Ill.  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Cincinnati Iron Fence Co., Cincinnati, Ohio.  
Cyclone Fence Co., Waukegan, Ill.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufer & Co., Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Ohio Elevator & Mach. Co., The, Columbus, O.

## Fertilizer Machy. [See also Phosphate Machy.]

Stedman's Foundry & Machine Works, Aurora, Ind.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Files.

Barnett Co., G. & H., Philadelphia, Pa.

## Filters. (Water, for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
New York Con. Jewell Fil. Co., New York, N. Y.

## Fire Clay. [See Brick, Fire.]

## Fire Door Fixtures.

Richmond Safety Gate Co., Richmond, Ind.

## Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

## Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.

## Fire Hose.

Eureka Fire Hose Mfg. Co., New York, N. Y.

## Fire Places. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

## Fireproof Building Construction. [See Concrete Construction.]

## Fireproof Building Material.

Bannon Pipe Co., F., Louisville, Ky.  
Johns-Manville Co., H. W., New York, N. Y.

## Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.  
Richmond Safety Gate Co., Richmond, Ind.  
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Wagner's Sons Co., J. F., Louisville, Ky.  
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## Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

## Fittings. (Wire Rope.)

Waterbury Co., New York, N. Y.

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American Cast Iron Pipe Co., Birmingham, Ala.  
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American Spiral Pipe Works, Chicago, Ill.  
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National Tube Co., Pittsburgh, Pa.  
U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.

## Flare Lamps.

Free-O-Lite Co., Inc., The, Indianapolis, Ind.

## Flooring. (Orecoated Block.)

Republic Orecoating Co., Indianapolis, Ind.

## Flooring. (Hardwood, Maple, Oak.)

Whitting, William S., Elizabethton, N. C.

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Caldwell & Sons Co., H. W., Chicago, Ill.  
Salem Foundry & Machine Works, Salem, Va.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

## Flue Lining.

Owensboro Sewer Pipe Co., Owensboro, Ky.  
Southern Sewer Pipe Co., Birmingham, Ala.

## Forges.

Buffalo Forge Co., Buffalo, N. Y.

## Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

## Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

## Foundry Equipment and Supplies.

Hill-Brunner Fdry. Supply Co., Cincinnati, O.  
Newport Sand Bank Co., Inc., Newport, R. I.

## Foundry Facings. (Talc and Soapstones.)

Georgia Talc Co., Asheville, N. C.  
Hill-Brunner Fdry. Supply Co., Cincinnati, O.

## Foundry and Machine Shops.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Golden Foundry & Machine Wks., Columbus, Ga.  
Granger & Co., Louisville, Ky.  
Lombard Iron Works, Augusta, Ga.  
Titus, E. K., Petersburg, Va.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Frogs. [See Railroad Frogs and Switches.]

## Fuel Economizer.

Green Fuel Economizer Co., Mattawan, N. Y.

## Fuel Oil.

Gulf Refining Co., Pittsburgh, Pa.

## Furnaces. (For Industrial Purposes.)

Smythe Co., The, S. R., Pittsburgh, Pa.

## Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuses, Bases and Fittings.

Johns-Manville Co., H. W., New York, N. Y.

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American Sheet & Tin Plate Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
McCalla, Inc., Harold, Philadelphia, Pa.  
Whitaker-Glessner Co., Portsmouth Plant, Portsmouth, Ohio.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

## Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

## Garage Disposal Plants.

Stacy-Bates Co., Minneapolis, Minn.

## Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

## Gas Engines. [See Engines, Gas.]

## Gas Machines.

Kemp Mfg. Co., O. M., Baltimore, Md.

## Gas Plants.

Gas Engineering Co., Trenton, N. J.  
Power & Mining Machinery Co., Oudahy, Wis.  
Western Gas Construction Co., Ft. Wayne, Ind.

## Gas Producers.

Smythe Co., The, S. R., Pittsburgh, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.  
Wood & Co., R. D., Philadelphia, Pa.

## Gasoline and Kerosene.

Gulf Refining Co., Pittsburgh, Pa.

## Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

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Caldwell & Sons Co., H. W., Chicago, Ill.  
Cresson-Morris Co., Philadelphia, Pa.  
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Jeffrey Mfg. Co., Columbus, O.

## Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mo.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Triumph Electric Co., Cincinnati, O.

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Davis, Geo. O., Phila., Pa.  
Frothing & Robertson, Richmond, Va.  
Grimesley, G. F., Martinsburg, W. Va.

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Rinswanger & Co., Memphis, Tenn.

## Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

## Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.

## Granite.

Southern Marble & Granite Co., Spartanburg, S. C.

## Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

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Huber Grate Bar & Stoking Co., Baltimore, Md.  
Thomas Grate Bar Co., Birmingham, Ala.

## Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.

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American Ballast Co., Knoxville, Tenn.

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Mathews Gravity Carrier Co., Millwood City, Pa.

## Greases.

Albany Lubricating Co., New York, N. Y.

## Grease Cups.

Albany Lubricating Co., New York, N. Y.

## Greases and Lubricating Compounds.

Albany Lubricating Co., New York, N. Y.  
Galena Signal Oil Co., Franklin, Pa.  
Robinson & Son Co., Wm. C., Baltimore, Md.

## Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

## Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.

## Groovers.

Guthrie Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

## Gunpowder.

Du Pont De Nemours Powder Co., E. I., Wilmington, Del.  
Keystone National Powder Co., Emporium, Pa.

## Handle Machinery. [See Woodworking Machinery.]

## Hangers. [See Pulleys, Shafting and Hangers.]

## Hay Tools.

Myers & Bro., F. E., Ashland, Ohio.

## Heater. (Asphalt.)

Cumner & Son Co., F. D., The, Cleveland, Ohio.

## Heating Apparatus, Engineers and Contractors.

Allen-Scales Engineering Co., Nashville, Tenn.  
American Blower Co., Detroit, Mich.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Kelly, Thos. G., Cincinnati, Ohio.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Walker Electric & Plumbing Co., Rome, Ga.

## Hoisting Machinery.

Byers Machine Co., The, John F., Ravenna, Ohio.  
Duke Engine Co., Grand Haven, Mich.  
Erie Clutch & Pulley Co., Erie, Pa.  
Flory Mfg. Co., S., Bangor, Pa.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.  
Stroudsburg Engine Works, Stroudsburg, Pa.

## Hoists.

Spindel, J. G., Reading, Pa.

## Hoists. (Electric.)

Lidgerwood Mfg. Co., New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.  
National Hoisting Engine Co., Harrison, N. J.  
Otis Elevator Co., New York, N. Y.  
Patten Mfg. Co., Chattanooga, Tenn.

## Hoists. (Steam.)

Byers Machine Co., John F., Ravenna, Ohio.  
Flory Mfg. Co., S., Bangor, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Stroudsburg Engine Works, Stroudsburg, Pa.

## Hollow Building Tiles.

Killian Fireproofing & Brick Works, Killian, S. C.  
Oconee Brick & Tile Co., Milledgeville, Ga.

## Hoops, Bands, etc. (Galvanized.)

McCalla, Inc., Harold, Philadelphia, Pa.

## Hose. [See



- Insulated Wires and Cables.**  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Insulating Materials.**  
General Electric Co., Schenectady, N. Y.  
John-Manville Co., H. W., New York, N. Y.
- Insurance.**  
Hartford Steam Boiler Inspector & Insurance Co., Hartford, Conn.
- Investment Securities.**  
New First National Bank, Columbus, O.  
Fidelity, Garard & Co., Chicago, Ill.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
- Iron.**  
Allegheny Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Union Drawn Steel Co., Beaver Falls, Pa.  
Wood Iron & Steel Co., Alto, Philadelphia, Pa.
- Irrigation Machinery.**  
Cameron Steam Pump Wks., A. S. New York, N. Y.
- Kettles. (Steam Jacket.)**  
Bader & Sons Co., E. R., Boston, Mass.
- Lace Leather.**  
Gorton & Knight Mfg. Co., Worcester, Mass.
- Lamps. (Arc and Incandescent.)**  
Boston-Economy Lamp Division, Danvers, Mass.  
General Electric Co., Schenectady, N. Y.  
Lee Electric Co., Baltimore, Md.  
Piedmont Electric Co., Asheville, N. C.
- Lamps. (Carbon and Tungsten.)**  
Sesman Electric Lamp Co., Cincinnati, O.
- Lamp Posts. (Electric, Gas.)**  
Western Gas Construction Co., Ft. Wayne, Ind.
- Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Landscape Architects [See Engineers.] [Landscaping.]**
- Lathes. (Engine.)**  
Greaves, Klueman Tool Co., The, Cincinnati, O.
- Lawn Furniture. (Wire.)**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Cincinnati Iron Fence Co., Cincinnati, Ohio.  
Defer & Co., Baltimore, Md.  
Dehr, Bargott & Co., Baltimore, Md.
- Lights. (Portable Acetylene.)**  
Wilburn Co., Alex. N., Baltimore, Md.
- Liquor Filters.**  
International Filter Co., Chicago, Ill.
- Lithographers, Engravers.**  
Young & Selden Co., Baltimore, Md.
- Lockers (Steel)**  
Bernstein Mfg. Co., Phila., Pa.  
Kelley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.  
Merritt & Co., Camden, N. J.  
Van Hurlingen, J. M., Atlanta, Ga.
- Locomotives.**
- INDUSTRIAL.**  
Baldwin Locomotive Wks., The, Philadelphia, Pa.  
Climax Mfg. Co., Corry, Pa.  
Cord, Geo. B., Cincinnati, O.  
Davenport Locomotive Works, Davenport, Ia.  
Fate Co., J. D., Plymouth, Ohio.  
Jeffrey Mfg. Co., Columbus, O.  
Lima Locomotive Corporation, Lima, O.  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta, Ga.
- RAILWAY.**  
Baldwin Locomotive Wks., The, Philadelphia, Pa.  
Lima Locomotive Corporation, Lima, O.  
Porter Co., H. K., Pittsburgh, Pa.
- Looms and Weaving Machinery.**  
Draper Co., Hopedale, Mass.  
Bacon Machine Works, Taunton, Mass.  
Saco-Lowell Shops, Boston, Mass.
- Loom Harness.**  
American Supply Co., Providence, R. I.
- Lubricants.**  
Albany Lubricating Co., New York, N. Y.  
Ohio Elevator Co., New York, N. Y.
- Lubricants. (Graphite.)**  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Lumber.**  
Industrial Lumber Co., Elizabeth, La.  
Lumber. (Crescote.)  
American Crescote Works, New Orleans, La.
- Lumber. (Heavy Construction, Pitch Pine, etc.)**  
Industrial Lumber Co., Elizabeth, La.  
National Lumber & Crescote Co., Texarkana, Ark.
- Lumber Buggies.**  
Soule Steam Feed Works, Meridian, Miss.
- Lumber Stackers.**  
Soule Steam Feed Works, Meridian, Miss.
- Machinery. (Special.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Eagle Mfg. Co., Cincinnati, Ohio.  
Kane, Lewis T., Alpena, Mich.  
Universal Machine Co., Baltimore, Md.
- Machinery and Supplies. (New and Second-Hand Bargains.)**  
Assets Purchasing Co., Wheeling, W. Va.  
Baker & James Boiler & Mch. Co., Joplin, Mo.  
Birtwell, W. L., Phila., Pa.  
Boston Iron & Metal Co., Balto., Md.  
Cleveland Belting & Machinery Co., Cleveland, O.  
Dusela & Son, New York, N. Y.  
Harris Bros. Co., Chicago, Ill.  
Hrde Bros. Steel & Rail Co., Pittsburgh, Pa.  
Lehman, Charles T., Birmingham, Ala.  
Lodge & Shipley Mach. Tool Co., Cincinnati, O.  
Marine Metal & Supply Co., New York, N. Y.  
Moore & Co., Edgar M., Pittsburgh, Pa.
- New River Co., Macdonald, W. Va.**  
Nosebaum & Co., V. M., Fort Wayne, Ind.  
Pannmuller Engineering Co., Chicago, Ill.  
Power Equipment Co., New York, N. Y.  
Prentiss Tool & Supply Co., New York, N. Y.  
Randle Machinery Co., Cincinnati, O.  
Read Co., Howard W., Philadelphia, Pa.  
Sachsenmaier & Co., George, Philadelphia, Pa.  
Samuel, Frank, Philadelphia, Pa.  
Sayler's Sons, Inc., L. E., Philadelphia, Pa.  
Southern Mchry. Exchange, Jacksonville, Fla.  
South Side Fdry. & Mch. Co., Charleston, W. Va.  
Stearns, John C., Kansas City, Mo.  
Tampa Machinery Exchange, Tampa, Fla.  
Toomer, Frank, Inc., Philadelphia, Pa.  
Wilson Machy. Co., Harold, R., St. Louis, Mo.
- Machine Tools.**  
Greaves, Klueman Tool Co., The, Cincinnati, O.
- Machinists. (Engineers.)**  
Universal Machine Co., Baltimore, Md.
- Magnesia Materials.**  
John-Manville Co., H. W., New York, N. Y.
- Magnetic Separators.**  
Buchanan & Co., Inc. O. G., New York, N. Y.
- Mall Chutes.**  
Cutler Mail Chute Co., Rochester, N. Y.
- Mechanical Draft.**  
Buffalo Forge Co., Buffalo, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Metal Ceilings. [See Ceilings, Metal.]**
- Metallins.**  
Metalline Co., Long Island City, N. Y.
- Metal. (For Tanks, Culverts, Roofing, etc.)**  
Whitaker-Giesner Co., Portsmouth Plant, Portsmouth, Ohio.
- Metal Culverts. [See Culverts.] (Corrugated Metal.)**
- Metal Shingles. [See Shingles.] (Metal.)**
- Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)**
- Metal Work. [See Sheet Metal Work.]**
- Metal-Working Machinery. (Sheet.)**  
Bliss Co., E. W., Brooklyn, N. Y.
- Meters. (Water.)**  
Alberger Pump & Condenser Co., New York, N. Y.
- Meter Boxes, Couplings, Gauges. (Water.)**  
Clark Co., H. W., Mattoon, Ill.
- Micrometers, Calipers, etc.**  
Starrett Co., L. S., Athol, Mass.
- Milk Filters. (Liquor, Milk, etc.)**  
International Filter Co., Chicago, Ill.
- Mill Engineers and Architects.**  
O'Brian, W. C., Memphis, Tenn.  
Sirtine, J. E., Greenville, S. C.
- Mill Supplies.**  
Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Gainesville Iron Works, Gainesville, Ga.  
Lombard Iron Works, Augusta, Ga.  
Lunkenheimer Co., The, Cincinnati, O.  
Mecklenburg Iron Works, Charlotte, N. C.  
Salem Foundry & Machine Wks., Salem, Va.  
Starr Co., R. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.
- Mining Machinery. (Gold, Copper, Plate, etc.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Jeffrey Mfg. Co., Columbus, O.  
McLennan-Stone Mach. Co., Hollidaysburg, Pa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Mixers. (Concrete.)**  
Milwaukee Concrete Mixer Co., Milwaukee, Wis.  
Van Duzens, Roys Co., The, Columbus, O.
- Mixing Machinery.**  
Dunning, W. D., Syracuse, N. Y.
- Mortar Colors.**  
Chattanooga Paint Co., Chattanooga, Tenn.
- Motor Trucks. (Gasoline.)**  
White Co., The, Cleveland, O.
- Motor Trucks. (Second Hand.)**  
Mar-Del Mobile Co., Baltimore, Md.
- Music Wire.**  
American Steel & Wire Co., Chicago, Ill.  
Waterbury Co., The, New York, N. Y.
- Nails. (Out.)**  
La Belle Iron Works, Steubenville, O.
- Nails and Spikes.**  
La Belle Iron Works, Steubenville, Ohio.  
Republic Iron & Steel Co., Youngstown, O.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Nuts. [See Bolts, Nuts, Rivets, etc.]**
- Office Furniture (Steel)**  
Merritt & Co., Camden, N. J.
- Oil. (Crescote.)**  
Barrett Mfg. Co., Philadelphia, Pa.
- Oil. (Lubricating, Etc.)**  
Albany Lubricating Co., New York, N. Y.  
Galena Signal Oil Co., Franklin, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
Robinson & Son Co., Wm. O., Baltimore, Md.
- Oil Cans.**  
Wall Mfg. Supply Co., P., Allegheny, Pa.
- Oil Engines. [See Engines (Oil).]**
- Oil Separators.**  
Stewart Heater Co., Buffalo, N. Y.
- Oil Well Machinery.**  
Keystone Steam Well Mach. Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.
- Orna Handling Machinery. [See Coal Handling Machinery.]**
- Ornamental Iron Works.**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Dow Wire & Iron Works, Louisville, Ky.  
Ohio Elevator & Mach. Co., The, Columbus, O.  
Scriber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.
- Oxygen.**  
International Oxygen Co., New York, N. Y.
- Oxygen Generators.**  
International Oxygen Co., New York, N. Y.
- Oxy-Acetylene Welding and Cutting Outfit and Supplies.**  
International Oxygen Co., New York, N. Y.  
Milburn Co., Alex. N., Baltimore, Md.
- Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**  
Graton & Knight Mfg. Co., Worcester, Mass.  
Jenkins Bros., New York, N. Y.  
John-Manville Co., H. W., New York, N. Y.  
Power Specialty Co., New York, N. Y.  
United Lead Co., New York, N. Y.
- Packing. (Lead Wool.)**  
United Lead Co., New York, N. Y.
- Paint. (Metal Surfaces.)**  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Paint. (Preservative.)**  
Reeves Co., The, New Orleans, La.
- Paint. (Roofing, Building, etc.)**  
Cameron & Barkley Co., Charleston, S. C.  
Chattanooga Paint Co., Chattanooga, Tenn.
- Paper. (Roofing, Building, Sheeting, etc.)**  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.
- Partitions. (Wooden Rolling.)**  
Van Hurlingen, J. M., Atlanta, Ga.
- Patents and Inventions.**  
Russell Machine Co., F. E., Dallas, Tex.
- Patent Attorneys.**  
Brown, Eugene O., Washington, D. C.  
Chandler & Chandler, Washington, D. C.  
Coleman Watson E., Washington, D. C.  
Duffie & Co., John E., Washington, D. C.  
Evans & Co., Victor J., Washington, D. C.  
Fitzgerald & Co., W. T., Washington, D. C.  
Hodges, Vernon E., Washington, D. C.  
Jenner, Herbert, Washington, D. C.  
Lacey, R. S. & A. B., Washington, D. C.  
McLundie, A. S., Chattanooga, Tenn.  
Mills, Mansell F., Washington, D. C.  
Parker, C. L., Washington, D. C.  
Woodworth John E., Washington, D. C.
- Pavement Filler.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Paving Blocks. (Crescote.)**  
International Crescoting & Construction Co., Galveston, Tex.  
National Lumber & Crescoting Co., Texarkana, Ark.  
Republic Crescoting Co., Indianapolis, Ind.  
Southern Crescoting Co., Ltd., Siltell, La.  
Southern Paving Const. Co., Chattanooga, Tenn.  
Southern Wood Preserving Co., Atlanta, Ga.  
U. S. Wood Preserving Co., New York, N. Y.  
Wyckoff Pipe & Crescoting Co., Inc., The, New York, N. Y.
- Paving Blocks. (Granite.)**  
Southern Marble & Granite Co., The, Spartanburg, S. C.
- Paving Brick.**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingalls Shale Brick Co., Birm'gh'm, Ala.  
Dunn Wire-Out-Lug Brick Co., Conneaut, Ohio  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
Standard Brick Co., Macon, Ga.
- Perforated Metal.**  
Caldwell & Son, H. W., Chicago, Ill.  
Eldred Perforating Co., Rochester, N. Y.  
Hendricks Mfg. Co., The, Carbondale, Pa.  
Manhattan Perforated Metal Co., New York, N. Y.  
Mundt & Sons, Charles, Jersey City, N. J.
- Petroleum Refiners.**  
Gulf Refining Co., Pittsburg, Pa.  
Standard Oil Co., Inc., Newark, N. J.
- Phosphate Machinery.**  
American Process Co., New York, N. Y.  
Bailey-Lebby Co., The, Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Link Belt Co., Nictown (Philadelphia), Pa.  
McLennan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Impact Pulv. Co., Chicago, Ill.  
Valk & Murdoch Iron Works, Charleston, S. C.
- Pig Iron.**  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
- Pile Drivers.**  
Valcan Iron Works, Chicago, Ill.
- Pile Driving and Wharf Building.**  
Murray & Co., Inc., W. D., Norfolk, Va.
- Piling. (Crescote.)**  
American Crescote Works, New Orleans, La.  
Intern'l Crescoting & Const. Co., Galveston, Tex.  
Southern Crescoting Co., Ltd., Siltell, La.  
Southern Paving Const. Co., Chattanooga, Tenn.
- Pillow Blocks.**  
Golden's Foundry & Machine Co., Columbus, Ga.  
Medart Patent Pulley Co., St. Louis, Mo.
- Pipe. (Cast Iron.)**  
Allegheny Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, Ohio.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe. (Cast Iron.)**  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Construction Co., Phila., Pa.  
Clew & Sons, James B., Chicago, Ill.  
Donaldson Iron Co., Emsau, Pa.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Lynchburg Foundry Co., Lynchburg, Va.  
Maximilian Iron & Steel Co., Maximilian, O.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.
- Pipe. (Coil.)**  
Frick Co., The, Waynesboro, Pa.  
National Pipe Bending Co., New Haven, Conn.  
York Mfg. Co., York, Pa.
- Pipe. (Corrugated Culvert.) [See Culvert (Corrugated Metal).]**
- Pipe (Lead)**  
United Lead Co., New York, N. Y.
- Pipe. (Riveted.)**  
Keeler Co., E., Williamsport, Pa.
- Pipe. (Second Hand.)**  
Kagle Pipe Supply Co., New York, N. Y.  
Marine Metal & Supply Co., New York, N. Y.
- Pipe. (Spiral Riveted.)**  
American Spiral Pipe Works, Chicago, Ill.
- Pipe. (Spiral Steel.)**  
Standard Spiral Pipe Works, Chicago, Ill.
- Pipe. (Sewer, Vitrified.) [See Sewer Pipe, Vitrified.]**
- Pipe. (Wood.)**  
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe. (Wrought Iron.)**  
Youngtown Sheet & Tube Co., Youngstown, O.
- Pipe Bends.**  
Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.
- Pipe Covering. (Steam.)**  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.  
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe Cutting and Threading Machinery.**  
Saunders' Sons, D., Yonkers, N. Y.
- Pipe Fittings.**  
American Cast Iron Pipe Co., Birmingham, Ala.  
Lunkenheimer Co., The, Cincinnati, O.  
Pittsburgh Valve, Fdry. and Const. Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.
- Pipe Jointing. (Gas and Water Main.)**  
United Lead Co., New York, N. Y.
- Pipe Unions and Joints.**  
Dart Mfg. Co., E. M., Providence, R. I.  
National Tube Co., Pittsburgh, Pa.
- Pipe Wrenches and Cutters.**  
Saunders' Sons, D., Yonkers, N. Y.
- Pipes. (Designed and Installed.)**  
Pittsburgh Valve, Foundry & Construction Co., Pittsburgh, Pa.
- Pitch.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Plaster Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.
- Plates.**  
Allegheny Steel Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Wood Iron & Steel Co., Alto, Philadelphia, Pa.
- Pneumatic Tools. [See Tools—Pneumatic.]**
- Poles. (Crescote.)**  
American Crescote Works, New Orleans, La.  
Intern'l Crescoting & Const. Co., Galveston, Tex.  
National Lumber & Crescote Co., Texarkana, Ark.  
Southern Crescoting Co., Ltd., Siltell, La.  
Southern Paving Const. Co., Chattanooga, Tenn.  
Southern Wood Preserving Co., Atlanta, Ga.
- Polishing Machinery. (Wheels and Blocks.)**  
Carborandum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Power Plants. (Steam and Electric.)**  
Allen-Scales Engineering Co., Nashville, Tenn.  
Assets Purchasing Co., Wheeling, W. Va.  
Gibbs Machinery Co., Inc., Columbia, S. C.
- Power Transmission Machinery.**  
Bailey-Lebby Co., Charleston, S. C.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon-Morris Co., Philadelphia, Pa.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nictown (Philadelphia), Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Schofield Iron Works, Macon, Ga.  
Smith-Courtney Co., Richmond, Va.  
Wolf Co., The, Chambersburg, Pa.  
Wood's Sons, T. B., Chambersburg, Pa.
- Presses. (Balling, Cottonseed Oil, etc. Hydraulic and Power.)**  
Boomer & Boschart Press Co., Syracuse, N. Y.  
Cardwell Machine Co., Richmond, Va.  
Continental Gln Co., Birmingham, Ala.  
French Oil Mill Mchry. Co., The, Piquette, Ohio  
Grote Mfg. Co., T., Evansville, Ind.  
Murray Co., The, Atlanta, Ga.  
Saco-Lowell Shops, Boston, Mass.
- Presses. (Stamping.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Max Ams Machine Co., Mt. Vernon, N. Y.
- Pressed Steel Construction.**  
Trussed Concrete Steel Co., Youngstown, O.
- Printers. (Book, Catalog, Job, etc.)**  
Fleet-McGinley Co., Baltimore, Md.
- Promoters.**  
Electric Bond & Share Co., New York
- Pulleys. (Friction Clutch.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon-Morris Co., Philadelphia, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Moore & White Co., The, Philadelphia, Pa.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulleys. (Steel Rim.)**  
Medart Patent Pulley Co., St. Louis, Mo.
- Pulleys. (Wood Split.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Lane Mfg. Co., Montpelier, Vt.  
Medart Patent Pulley Co., St. Louis, Mo.  
Revere Pulley Co., Columbus, Ind.  
Saginaw Mfg. Co., Saginaw, Mich.  
Salem Foundry & Machine Wks., Salem, Va.
- Pulleys, Shafting and Hangers.**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon-Morris Co., Philadelphia, Pa.  
Erie Clutch & Pulley Co., Erie, Pa.  
Golden's Foundry & Mach. Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nictown (Philadelphia), Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Wood's Sons Co., T. B., Chambersburg, Pa.

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- Pulverizers.**  
Austin Mfg. Co., Chicago, Ill.  
Gründler Pat. Crusher & Pulv. Co., St. Louis, Missouri.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Bros., Impact Pulv. Co., Chicago, Ill.  
Stedman's Foundry & Machine Wks., Aurora, Ind.  
Western Wheel Scraper Co., Aurora, Ill.
- Pumping Machinery.**  
Affiliated Manufacturers Co., Milwaukee, Wis.  
Alberger Pump & Condenser Co., New York, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cook, A. D., Lawrenceburg, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Erie Pump & Equipment Co., Erie, Pa.  
Holland Machine Co., New York, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Morris Machine Works, Baldwinville, N. Y.  
Myers & Bros., F. E., Ashland, O.  
Platt Iron Works Co., Dayton, Ohio.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Air.)**  
Blakelee Mfg. Co., Du Quoin, Ill.
- Pumps. (Air Lift.)**  
Sullivan Mchry. Co., Chicago, Ill.
- Pumps. (Boiler Feed.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blakelee Mfg. Co., Du Quoin, Ill.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Jeansville Iron Works Co., Hazleton, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Myers & Bros., F. E., Ashland, O.
- Pumps. (Centrifugal.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Erie Pump & Equipment Co., Erie, Pa.  
Holland Machine Co., New York, N. Y.  
Morris Machine Works, Baldwinville, N. Y.  
Pacific Flush Tank Co., New York, N. Y.  
Platt Iron Works Co., Dayton, Ohio.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Deep Well.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Holland Machine Co., New York, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Layne & Bowler Co., Houston, Tex.
- Pumps. (Dredging.)**  
Buffalo Steam Pump Works, Buffalo, N. Y.  
Erie Pump & Equipment Co., Erie, Pa.  
Holland Mch. Co., New York, N. Y.  
Morris Machine Works, Baldwinville, N. Y.  
Wood & Co., R. D., Phila., Pa.
- Pumps. (Hydraulic.)**  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cardwell Machine Co., New York, N. Y.  
Erie Pump & Equipment Co., Erie, Pa.  
French Oil Mill Mchry. Co., The Piqua, O.  
Holland Mch. Co., New York, N. Y.
- Pumps. (Oil and Gasoline.)**  
Keystone Boiler & Fdry. Co., Columbia, Pa.
- Pumps. (Steam.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Blakelee Mfg. Co., Du Quoin, Ill.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Clayton Air Compressor Works, Cambridge, Mass.  
Cook, A. D., Lawrenceburg, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Murray Iron Works Co., Burlington, Ia.  
Snow Steam Pump Works, The New York, N. Y.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Trench.)**  
Affiliated Manufacturers Co., Milwaukee, Wis.
- Pumps. (Carbine Driven.)**  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Pumps. (Vacuum.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Pumps. (Water-works.)**  
Holland Mch. Co., New York, N. Y.  
Platt Iron Works Co., Dayton, Ohio.
- Pump Leathers.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Punching and Shearing Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Purchasing Agents.**  
U. S. Purchasing Corporation, New York, N. Y.
- Racks (For Pattern Storage).**  
Merritt & Co., Camden, N. J.
- Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**
- Railroad Equipment and Supplies. (New and Second-hand.)**  
American Frog & Switch Co., Hamilton, O.  
Bailey-Labby Co., The, Charleston, S. C.  
Birmingham Rail & Loco. Co., Birmingham, Ala.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Gurd, Geo. B., Cincinnati, O.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Foster Co., L. B., Pittsburgh, Pa.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hirsch Rolling Mill Co., St. Louis, Mo.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Hyde, Chas., Pittsburgh, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Maclear, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Read Co., Howard W., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. O., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Thaw & Williams, Cincinnati, Ohio.  
United States Rail Co., Cumberland, Md.  
Weir Frog Co., Cincinnati, O.  
West Virginia Rail Co., Huntington, W. Va.  
Wilson & Co., E. H., Philadelphia, Pa.  
Wilson Mach. Co., Harold R., St. Louis, Mo.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs & Switches.**  
American Frog & Switch Co., Hamilton, O.  
Carnegie Steel Co., Pittsburgh, Pa.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Conley Frog & Switch Co., Memphis, Tenn.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Newhall Engineering Co., Geo. M., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sweet's Steel Co., Williamsport, Pa.  
Weir Frog Co., Cincinnati, O.
- Rails. (Steel.)**  
Foster Co., L. B., Pittsburgh, Pa.  
Franks, J. E., Atlanta, Ga.  
Gulf States Steel Co., Birmingham, Ala.  
Hirsch Rolling Mill Co., St. Louis, Mo.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.  
Hyde, Chas., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Lewis & Co., Henry, Philadelphia, Pa.  
Maclear, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. O., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Sweet's Steel Co., Williamsport, Pa.  
United States Rail Co., Cumberland, Md.  
West Virginia Steel Co., Huntington, W. Va.  
Wilson & Co., E. H., Philadelphia, Pa.
- Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**
- Railings and Grilles. (Brass.)**  
Newman Mfg. Co., Cincinnati, O.
- Railways. (Industrial.)**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Hunt Co., Inc., O. W., West New Brighton, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Rams. (Hydraulic.) [See Hydraulic Ram.]**
- Reamers.**  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reeds.**  
American Supply Co., Providence, R. I.
- Refrigerating Machinery and Apparatus.**  
Huesterman & Cramer Co., The, Detroit, Mich.  
Portsmouth Engine Co., Portsmouth, N. H.  
Romington Machine Co., Wilmington, Del.  
Vilter Mfg. Co., Milwaukee, Wis.  
Vogt Machine Co., Henry, Louisville, Ky.  
York Mfg. Co., York, Pa.
- Reinforcing Bars. [See Concrete Reinforcing Bars.]**
- River and Harbor Improvements. (Dredges, Dock, Wharves, etc.)**  
Globe Dredging Co., Savannah, Ga.
- Road Expansion Joints.**  
Philip Carey Co., The, Cincinnati, Ohio.
- Road Machinery.**  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Erie Machine Shops, Erie, Pa.  
Galton Iron Works & Mfg. Co., The, Galton, Ohio.  
Holt Manufacturing Co., The, Peoria, Ill.  
Kelly Springfield Road Roller Co., Springfield, O.  
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.  
The Automatic Shovel Co., Lorain, Ohio.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheel Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Roadmaking Materials.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Rocmac Road Corp. of America, Phila. Pa.  
Semet-Solway Co., Solway, N. Y.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Binders.**  
Barrett Mfg. Co., Phila., Pa.  
Semet-Solway Co., Solway, N. Y.  
Standard Oil Co., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Roller. (Steam.)**  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Erie Machine Shops, Erie, Pa.  
Galton Iron Works & Mfg. Co., Springfield, O.  
Kelly Springfield Road Roller Co., Springfield, O.  
Ohio Tractor-Roller Sales Co., Columbus, Ohio.  
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Preservatives.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
Semet-Solway Co., Solway, N. Y.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Scarifiers.**  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Galton Iron Works & Mfg. Co., The, Galton, Ohio
- Rock Crushers. [See Crushers, Rock.]**
- Roller Covering Supplies.**  
American Supply Co., Providence, R. I.
- Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cheesapeake Roofing & Pipe Covering Co., Baltimore, Md.  
John-Manville Co., H. W., New York, N. Y.
- Roofing. (Metal Shingles.) [See Shingles, Metal.]**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.
- Roofing. (Slate.)**  
East Bangor Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.  
Standard Slate Corp., Esmond, Va.
- Roofing and Siding. (Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope. (Manila, Sisal, Hemp, etc.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope. (Wire.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Hunt Co., Inc., O. W., West New Brighton, N. Y.  
Waterbury Co., New York, N. Y.
- Rope Drives.**  
Caldwell & Son, H. W., Chicago, Ill.  
Crescent-Morris Co., Philadelphia, Pa.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rubber Goods.**  
Kereka Fire Hose Mfg. Co., New York, N. Y.
- Rules. (Steel.)**  
Larkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**  
York Safe & Lock Co., York, Pa.
- Sand.**  
Arundel Sand & Gravel Co., Baltimore, Md.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
- Sand. (Foundry.)**  
Newport Sand Bank Co., Inc., Newport, Ky.
- Sand Dryers.**  
American Process Co., New York, N. Y.  
Ripley Foundry & Mach. Co., The, Ripley, Ohio.
- Sap Stain Preventive.**  
Church & Dwight Co., New York, N. Y.
- Sash Chain.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws. (Industrial.)**  
Gerlich Co., Peter, Cleveland, O.  
Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.
- Saws. (Hack.)**  
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**  
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**  
Gainesville Iron Works, Gainesville, Ga.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.
- Sawmill Machinery.**  
Bailey-Labby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Chase Turbine Mfg. Co., Orange, Mass.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.  
Mecklenburg Iron Works, Charlotte, N. C.  
Scheldt Iron Works, Macon, Ga.  
Southern Engine & Boiler Wks., Jackson, Tenn.
- Saw Sharpeners.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files. (Ootton Gin.)**  
Carver Cotton Gin Co., East Bridgewater, Mass.
- Sawing Outfits. (Contractors and Industrial.)**  
Rutland Foundry & Machine Co., Bennington, Vt.
- Scales.**  
Standard Scale & Supply Co., Pittsburgh, Pa.
- Screens. (Fly, Window and Door.)**  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens. (Mining, Stone, etc.)**  
Erdie Perforating Co., Rochester, N. Y.  
Hendrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Mundt & Sons, Charles, Jersey City, N. J.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screenings. (For Concrete and Road Construction.)**  
American Ballast Co., Knoxville, Tenn.
- Screws. (Machine.)**  
Progressive Mfg. Co., Torrington, Conn.
- Screws. (Safety Set.)**  
Allen Manufacturing Co., Inc., Hartford, Conn.
- Screw Machine Products.**  
Progressive Mfg. Co., Torrington, Conn.
- Separators. (Dust.)**  
Buffalo Forge Co., Buffalo, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Sewer Flushing Siphons.**  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Joint Compounds.**  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Pipe. (Vitrified.)**  
Bannon Pipe Co., F., Louisville, Ky.  
Blackmer & Post Pipe Co., St. Louis, Mo.  
Cannellon Sewer Pipe Co., Cannellon, Ind.  
Owensboro Sewer Pipe Co., Owensboro, Ky.  
Pomona Terra-Ootta Co., Pomona, N. C.  
Southern Sewer Pipe Co., Birmingham, Ala.  
Stevens Sons Co., H., Macon, Ga.
- Sewer Pipe and Drains. (Monolithic Concrete)**  
Requarth Co., O. W., Charlotte, N. C.
- Sewage Pumping and Disposal Apparatus.**  
Pacific Flush Tank Co., New York, N. Y.
- Shafting. (Cold Rolled Steel.)**  
American Steel & Wire Co., Chicago, Ill.
- Shafting. (Polished Steel.)**  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Pardee Works Co., Perth Amboy, N. J.  
Republic Iron & Steel Co., Youngstown, O.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Shafting. [See Pulleys, Shafting and Hangers.]**
- Sharpening Stones.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Sheet. Brass and Copper.**  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Sheet Metal Work.**  
Atlas Metal Works, Dallas, Tex.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Eagle Mfg. Co., Cincinnati, Ohio.  
Lone Star Culvert Co., Houston, Tex.  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.  
Salisbury Metal Culvert Co., Salisbury, N. C.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Metal & Culvert Co., Roanoke, Va.  
Volkmann & Co., Chicago, Ill.
- Sheet Metal Working Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Shelving. [(Steel) Vault, Store, Etc.]**  
Merritt & Co., Camden, N. J.  
Van Harlingen, J. M., Atlanta, Ga.
- Shingles. (Metal.)**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Shovel. (Special for Any Purpose.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shovels. (Steel, Brass, Aluminum, etc.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shutters. (Iron.)**  
Boiles Iron & Wire Works, J. E., Detroit, Mich.  
Cheesapeake Iron Works, Baltimore, Md.
- Shutters. (Steel Rolling.)**  
Kinross Mfg. Co., Columbus, O.
- Shutters. (Tin Clad.)**  
Victor Mfg. Co., Newburyport, Mass.
- Silos. (Metal.)**  
Dixie Culvert & Metal Co., Atlanta, Ga.
- Slate. (Roofing, Sanitary, Structural, etc.)**  
East Bangor Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.  
Standard Slate Corp., Esmond, Va.
- Sluice Gates and Appliances.**  
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks. (Iron and Steel.)**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Scheldt Iron Works, Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Soda. (Bicarbonate.)**  
Church & Dwight Co., New York, N. Y.
- Speed Changes. (Variable.)**  
Moore & White Co., The, Philadelphia, Pa.
- Speed Reducing Transmissions.**  
James Mfg. Co., D. O., Chicago, Ill.
- Spikes. (Railroad.)**  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
- Spikes. [See Nails and Spikes.]**
- Spiral Stairs.**  
Merritt & Co., Camden, N. J.
- Spreaders. (Road.)**  
Troy Wagon Works Co., Troy, Ohio
- Springs. (Machinery, Railway, Spiral.)**  
Gary Spring Works, New York, N. Y.  
Raymond Mfg. Co., Ltd., Corry, Pa.
- Stamp Mills.**  
Mecklenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**  
Baltimore Office Supply Co., Baltimore, Md.  
Dorman Co., J. F. W., Baltimore, Md.
- Standpipes.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Struthers-Wells Co., Warren, Pa.
- Stapling Machinery. (Fruit Package, Basket, etc.)**  
Saracac Machine Co., Benton Harbor, Mich.
- Stationers. (Envelopes, Letter and Bill Heads, etc.)**  
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**  
Soule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**  
Sanders' Sons, D., Inc., Yonkers.
- Steam Heating.**  
Keeler Co., E., Williamsport, Pa.
- Steamship Lines. (Coastwise.)**  
Baltimore Steam Packet Co., Baltimore, Md.  
Cheesapeake Steamship Co., Baltimore, Md.  
Merchants & Miners' Trans. Co., Baltimore, Md.
- Steamship Lines. (Trans Atlantic.)**  
Ognard Steamship Co., Ltd., New York, N. Y.
- Steam Shovel Chains.**  
Weimer Chain & Iron Co., Lebanon, Pa.
- Steam Shovels.**  
American Clay Machinery Co., The, Bucyrus, Ohio.  
Fairbanks Steam Shovel Co., Marion, O.  
Keystone Drill & Equipment Co., Beaver Falls, Pa.  
Marion Steam Shovel Co., Marion, Ohio.  
Sherwood, E. O., New York, N. Y.  
The Automatic Shovel Co., Lorain, Ohio.
- Steam Specialties.**  
Lunkenheimer Co., The, Cincinnati, Ohio.  
Powell Co., Wm., Cincinnati, O.
- Steam Traps.**  
Jenkins Bros., New York, N. Y.
- Steel.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Gulf States Steel Co., Birmingham, Ala.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Pardee Works Co., Perth Amboy, N. J.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.  
Union Drawn Steel Co., Beaver Falls, Pa.  
Weir Frog Co., Cincinnati, O.  
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Steel. (Tool.)**  
Bourne-Fuller Co., The, Cleveland, Ohio.  
McKenna Bros. Brass Co., Pittsburgh, Pa.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Steel. (Vanadium.)**  
Carnegie Steel Co., Pittsburgh, Pa.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Steel Buildings. (Designers, Builders.)**  
Amer. Bridge Co., of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Case Crane & Engineering Co., Columbus, Ohio.  
Champion Bridge Co., Wilmington, O.  
Cheesapeake Iron Works, Baltimore, Md.  
Des Moines Bridge & Iron Co., Des Moines, Ia.



Phoenix Iron Co., Philadelphia, Pa.  
Pittsburgh Des Moines Steel Co., Chattanooga, Tenn.  
Richmond Structural Steel Co., Richmond, Va.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Speed Architectural Iron Works, Louisville, Ky.  
Turner, C. A. F., Minneapolis, Minn.  
Virginia Bridge & Iron Co., Roanoke, Va.

#### Steel Castings.

Graciele Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Riverside Steel Casting Co., Newark, N. J.

#### Steel Plate Work.

Cassidy-Hedger Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chattanooga Boiler Works, Chattanooga, Tenn.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Memphis Steel Construction Co., Memphis, Tenn.  
Phoenix Iron Co., Philadelphia, Pa.  
Struthers-Wells Co., Warren, Pa.

#### Steel Protector. (Concrete Curb, Steps, etc.)

[See Curb Protector Steel.]

#### Steel Sheet Piling.

Frank, J. E., Atlanta, Ga.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.

#### Stencils.

Milwaukee Office Supply Co., Baltimore, Md.  
Porman Co., J. F. W., Baltimore, Md.

#### Stirrups. (Building.)

Champerne Iron Works, Baltimore, Md.

#### Stock Certificates, Bonds and Seals.

Milwaukee Office Supply Co., Baltimore, Md.  
Porman Co., J. F. W., Baltimore, Md.

#### Stock Room Racks, Bins, Etc.

Herrille & Co., Camden, N. J.

#### Stokers. (Hand.)

Huber Grate Bar & Stoking Co., Baltimore, Md.

#### Stokers. (Mechanical.)

Hubcock & Wilcox Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

#### Stone. (Building.)

Atlantic Stone Co., Atlanta, Ga.  
Bedford Steam Stone Works, Bedford, Ind.  
Erikpatrick Sand & Cement Co., Birmingham, Ala.

#### Stone. (Crushed.) [See Crushed Stones.]

#### Stone and Gravel Plants.

Veller Mfg. Co., Chicago, Ill.

#### Storage Batteries.

Gen. Storage Battery Co., The Philadelphia, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.

#### Strapping Leather.

Levin & Knight Mfg. Co., Worcester, Mass.

#### Structural Steel and Iron.

Allegheny Steel Co., Pittsburgh, Pa.  
Amer. Bridge Co. of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Barnes-Fuller Co., The, Cleveland, Ohio  
Carnegie Steel Co., Pittsburgh, Pa.  
Case Crane & Engineering Co., Columbus, Ohio  
Champion Bridge Co., Wilmington, O.  
Champerne Iron Works, Baltimore, Md.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dietrich Bros., Baltimore, Md.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Eisner & Co., Louisville, Ky.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Memphis Steel Construction Co., Memphis, Tenn.  
Phoenix Iron Co., Philadelphia, Pa.  
Pittsburgh Des Moines Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Richmond Structural Steel Co., Richmond, Va.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Speed Architectural Iron Works, Louisville, Ky.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.

#### Stump Pullers.

Zimmerman Steel Co., Lone Tree, Iowa.

#### Sulphur.

Union Sulphur Co., New York, N. Y.

#### Super-Heaters. (Steam.)

Hubcock & Wilcox Co., New York, N. Y.  
Power Specialty Co., New York, N. Y.

#### Surveying Instruments.

Veber & Co., F., Philadelphia, Pa.

#### Sweeping Compound.

Kidder Co., Rome, Ga.

#### Swinging Engines.

Dake Engine Co., Grand Haven, Mich.

#### Switchboards, Switches, etc.

General Electric Co., Schenectady, N. Y.

#### Switches. [See Railroad Frogs and Switches.]

#### Switchstands.

Weir Frog Co., Cincinnati, O.

#### Tackle Blocks. (For Wire or Manila Rope.)

Broderick & Bascom Rope Co., St. Louis, Mo.

#### Talc and Soapstone Powders.

Georgia Talc Co., Ashville, N. C.

#### Tanks. (Iron and Steel.)

American Bridge Co., New York, N. Y.  
American Water Softener Co., Philadelphia, Pa.  
Gouldwell Co., Inc., W. E., Louisville, Ky.  
Cassidy-Hedger Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Cole Mfg. Co., R. D., Newman, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Hartley Boiler Works, Montgomery, Ala.  
Hendricks Mfg. Co., Carbondale, Pa.  
Kaiser Co., E., Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Lombard Iron Works, Augusta, Ga.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
Memphis Steel Construction Co., Memphis, Tenn.  
Pittsburgh Des Moines Steel Co., Pittsburgh, Pa.  
Schofield Iron Works, Macon, Ga.  
Struthers-Wells Co., Warren, Pa.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Twin City Boiler Works, Bristol, Va.-Tenn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Wash & Weidner Boiler Co., Chattanooga, Tenn.

#### Tanks. (Wood.)

Gouldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.

#### Tapes. (Measuring.)

Larkin Rule Co., Saginaw, Mich.  
Harrell Co., L. S., Athol, Mass.

#### Telephones. (Supplies, Equipment.)

Piedmont Electric Co., Asheville, N. C.  
Western Electric Co., New York, N. Y.

#### Telephone Service.

American Telephone & Telegraph Co.

#### Tenoner. (Box and Crates.)

Chase Turbine Mfg. Co., Orange, Mass.

#### Terra-Cotta. (Ornamental.)

Atlanta Terra-Cotta Co., Atlanta, Ga.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Building Material Co., Norfolk, Va.  
Stevens' Sons Co., H., Macon, Ga.

#### Threshers.

Cardwell Machine Co., Richmond, Va.

#### Tiering Machines. (Portable.)

Economy Engineering Co., Chicago, Ill.

#### Tile. (Drain)

Oconee Brick & Tile Co., Milledgeville, Ga.

#### Tile. (Interior)

Amer. Enam. Brick & Tile Co., New York, N. Y.

#### Tile. (Mantel and Promenade.)

Hood Brick Co., B. Miffin, Atlanta, Ga.

#### Tile. (Structural)

Oconee Brick & Tile Co., Milledgeville, Ga.

#### Timbers. (Crescoted.)

American Crescote Works, New Orleans, La.  
Republic Crescoting Co., Indianapolis, Ind.

#### Tin and Terne Plates.

American Sheet & Tin Plate Co., Pittsburgh, Pa.

#### Tobacco Machinery.

Backeye Iron & Brass Works, Dayton, O.  
Cardwell Machine Co., Richmond, Va.  
Grote Mfg. Co., F., Evansville, Ind.

#### Tools. (Machinists')

Holland Mfg. Co., Erie, Pa.  
Morse Twist Drill & Mch. Co., New Bedford, Mass.

#### Tools. (Mechanical.)

Starrett Co., L. S., Athol, Mass.

#### Tools. (Pneumatic.)

Chicago Pneumatic Tool Co., Chicago, Ill.

#### Trucks. (Platform, Freight, Mill, Factory, etc.)

Bernstein Mfg. Co., Phila., Pa.  
Obase Fdry. & Mfg. Co., Columbus, O.

#### Trucks. (Storage Battery Auto.)

Westinghouse Machine Co., Pittsburgh, Pa.

#### Trucks. (Storage Battery) [For Warehouses & Industrial Plants]

Klewell Parker Electric Co., The, New York, N. Y.

#### Trust Companies. [See Bankers and Brokers.]

#### Tubes. (Boiler.)

Allegheny Steel Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
National Tube Co., Pittsburgh, Pa.

#### Tube Well Strainers.

Cook, A. D., Lawrenceburg, Ind.

#### Tubing.

La Belle Iron Works, Steubenville, O.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

#### Turbines. (Hydraulic.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Davis Foundry & Machine Wks., Rome, Ga.  
Leffel & Co., James, Springfield, O.  
Salem Foundry & Machine Wks., Salem, Va.  
Smith Co., S. Morgan, York, Pa.

#### Turbines. (Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
General Electric Co., Schenectady, N. Y.  
Starveant Co., B. F., Hyde Park, Boston, Mass.  
Terry Steam Turbine Co., Hartford, Conn.  
Western Electric Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

#### Turn Buckles.

Broderick & Bascom Rope Co., St. Louis, Mo.

#### Turntables.

American Bridge Co., New York, N. Y.  
Virginia Bridge & Iron Co., Roanoke, Va.

#### Twines.

Columbian Rope Co., Auburn, N. Y.

#### Unions.

Dart Mfg. Co., E. M., Providence, R. I.  
National Tube Co., Pittsburgh, Pa.

#### Upholstering Material. (For Auto's & Furniture)

Du Pont Fabrikoid Co., Wilmington, Del.

#### Watchman's Clocks.

Watchman's Clock & Supply Co., New York, N. Y.

#### Water Filters. (See Filters, Water, etc.)

#### Waterproofing. (For Brick Work.)

Barrett Mfg. Co., Philadelphia, Pa.  
McCormick Waterproof Portland Cement Co., St. Louis, Mo.

#### Waterproofing. (For Concrete.)

Barrett Mfg. Co., Philadelphia, Pa.  
Johns-Manville Co., H. W., New York, N. Y.

#### Water-Softening Apparatus. (Purifying.)

American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
N. Y. Cont. Jewell Filter Co., New York, N. Y.  
Tucker & Laxton, Charlotte, N. C.

#### Water-Wheels. [See Turbines. (Hydraulic.)]

#### Water-Works Construction.

Berry-Fortune Const. Co., Eilatonton, Ga.

#### Water-Works Supplies and Appliances.

Allen-Scales Engineering Co., Nashville, Tenn.  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Constr. Co., Philadelphia, Pa.  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Clark Co., H. W., Mattoon, Ill.  
Clove & Sons, James H., Chicago, Ill.  
Coldwell-Wilcox Co., Newburgh, N. Y.  
Columbian Iron Works, Chattanooga, Tenn.  
Donaldson Iron Co., Kansas, Pa.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Layne & Bowler Co., Houston, Tex.  
Lynchburg Foundry Co., Lynchburg, Va.  
Massillon Iron & Steel Co., Massillon, Ohio.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Salem Fdry. & Machine Works, Salem, Va.  
Standard Spiral Pipe Works, Chicago, Ill.  
Stevens' Sons Co., H., Macon, Ga.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.

#### Welding. (Oxy-Acetylene Process.)

Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

#### Welding Plants. (Oxy-Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

#### Welding Apparatus. (Oxy-Acetylene Process.)

Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

#### Welding Supplies.

Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

#### Well Contractors. (Oil, Artesian, etc.)

Columbia Pump & Well Co., Washington, D. C.  
Cook, A. D., Lawrenceburg, Ind.  
Hughes Specialty Well Drill Co., Charleston, S. C.  
Stothoff Bros., Flemington, N. J.

#### Well Tools and Supplies.

Cook, A. D., Lawrenceburg, Ind.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.

#### Wheels and Axles.

Electric Wheel Co., Quincy, Ill.  
Oliver Mfg. Co., W. J., Knoxville, Tenn.

#### Wheelbarrows and Carts.

Sterling Wheelbarrow Co., Milwaukee, Wis.

#### Window Frames and Sash. (Fireproof.)

Detroit Steel Products Co., Detroit, Mich.  
Edwards Mfg. Co., The, Cincinnati, O.  
Voigtmann & Co., Chicago, Ill.  
Wagner's Sons Co., J. F., Louisville, Ky.

#### Window Frame Machinery.

Phillips Mfg. Co., Orlando, Fla.

#### Window Guards. (Wire.) [See Wire Goods.]

#### Windmills.

Caldwell Co., Inc., W. E., Louisville, Ky.  
Columbia Pump & Well Co., Washington, D. C.

#### Wire. (Barbed Wire, etc.)

American Steel & Wire Co., Chicago, Ill.  
Cyclone Fence Co., Waukegan, Ill.  
Roebling's Sons Co., John A., Trenton, N. J.  
Youngstown Sheet & Tube Co., Youngstown, O.

#### Wire. (Galvanized and Annealed.)

American Steel & Wire Co., Chicago, Ill.  
Gulf States Steel Co., Birmingham, Ala.

#### Wire. (Galvanized Telephone.)

American Steel & Wire Co., Chicago, Ill.  
Gulf States Steel Co., Birmingham, Ala.

#### Wire. (Plain Steel, Hoop, etc.)

Gulf States Steel Co., Birmingham, Ala.

#### Wire. (Signal.)

Safety Insulated Wire & Cable Co., New York, N. Y.

#### Wire Cloth. (Iron, Steel, Brass, etc.)

Caldwell & Sons Co., The, H. W., Chicago, Ill.  
Eureka Supply Co., Chattanooga, Tenn.  
Meyers Mfg. Co., The Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

#### Wire Cloths.

Boles Iron & Wire Wks., J. E., Detroit, Mich.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggett & Co., Baltimore, Md.  
Meyers Mfg. Co., The Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

#### Wire Netting.

American Steel & Wire Co., Chicago, Ill.  
New Jersey Wire Cloth Co., Trenton, N. J.

#### Wire Rope.

American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Roebling's Sons Co., John A., Trenton, N. J.  
Waterbury Co., New York, N. Y.  
Youngstown Sheet & Tube Co., Youngstown, O.

#### Wire Rope Clips.

American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.

#### Wires and Cables. (Insulated.)

Safety Insulated Wire & Cable Co., New York, N. Y.

#### Wood Blocks. (For Paving and Factory Floors)

U. S. Wood Preserving Co., New York, N. Y.

#### Wood Distillation.

Struthers-Wells Co., Warren, Pa.

#### Wood Pipe. (For Water, etc.)

Wyckoff & Son Co., A., Elmira, N. Y.

#### Wood. (Preservative.)

Barrett Mfg. Co., Phila., Pa.  
Reeves Co., The, New Orleans, La.

#### Woodworking Machinery.

Chase Turbine Mfg. Co., Orange, Mass.  
Gibbs Mach. Co., Inc., Columbia, S. C.  
Kline, Lewis T., Alpena, Mich.  
Lane Mfg. Co., Montpelier, Vt.  
Phillips Mfg. Co., Orlando, Fla.

#### Yarn. (Tanned Sial.)

Columbian Rope Co., Auburn, N. Y.

## Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.  
Advertising copy not requiring proof must reach us one week in advance of publication day.  
When proof is required, two weeks in advance.  
Width of column, 2¼ inches; length, 13 inches.  
Four columns to page.

### TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

#### Torches.

Wall Mfg. Supply Co., P., Allegheny, Pa.

#### Towers. (Electric Transmission.)

American Bridge Co. of New York, N. Y.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

#### Towers. (Steel and Wood.)

Caldwell & Co., Inc., W. E., Louisville, Ky.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cole Mfg. Co., R. D., Newman, Ga.  
Columbia Pump & Well Co., Washington, D. C.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Memphis Steel Const. Co., Memphis, Tenn.  
Pittsburgh Des Moines Steel Co., Pittsburgh, Pa.

#### Track Material. (Steam & Industrial Railroads.)

Conley Frog & Switch Co., Memphis, Tenn.

#### Traction Engines.

Fairbanks-Morse & Co., Atlanta, Ga.  
Holt Mfg. Co., The, Peoria, Ill.

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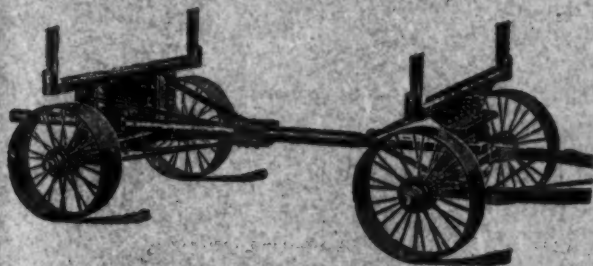
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
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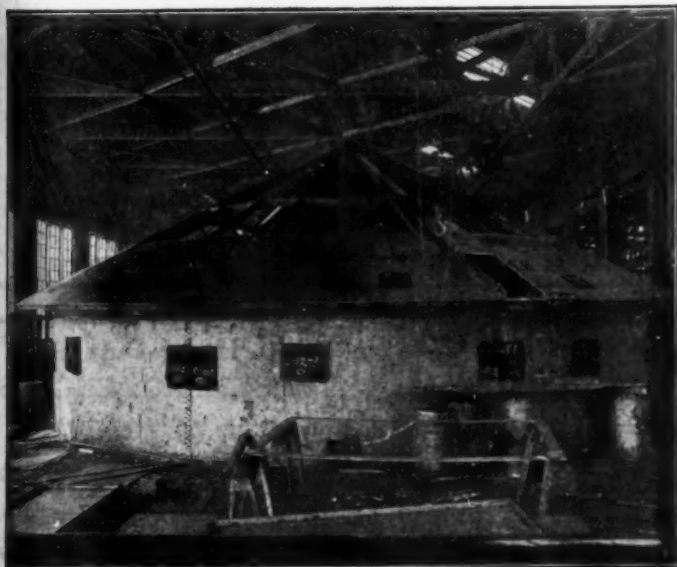




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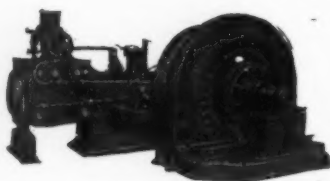
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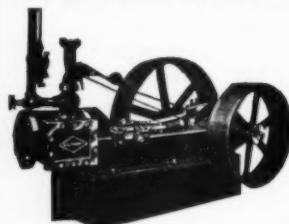
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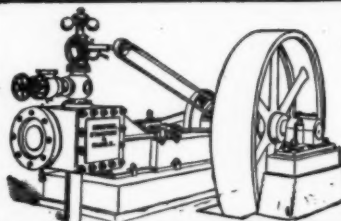
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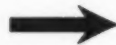
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One of our customers in writing us  
under date of March 10th, 1915,  
writes as follows:



The South's Great Engine,  
Boiler, Tank and Tower  
Builders

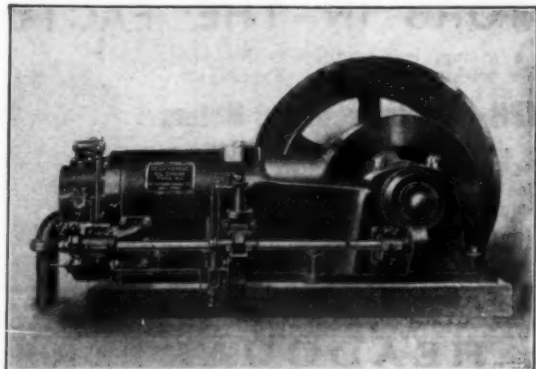
**J. S. Schofield's Sons Co.**  
Macon, Georgia

"Americus, Ga., March 10, 1915.  
J. S. SCHOFIELD'S SONS CO.,  
Macon, Ga.

Gentlemen:—Referring to the 10x14 Automatic Schofield Engine, we bought from you last fall for our ginney, we beg to advise that this engine pulls our 4-70 saws Lummus Air Blast Gin, with all ease, and runs perfectly easy, without any knock or rattle under full load, and is more economical than any engine we have at our other ginneries. In fact, we have never seen an engine of this design run as smoothly under full load as this one does, and it is very economical from a fuel standpoint.

Yours respectfully,  
**AMERICUS OIL CO.**  
L. W. Brown, Supt."





## "De La Vergne" Crude Oil Engines

furnish power for less cost than any other type of prime mover. They operate on the cheapest grades of crude oil, which can be bought from two to three cents per gallon.

Guaranteed to operate on any grade of commercial fuel or crude oil produced in the United States or Mexico, and to produce 16 B. H. P. hours per gallon of fuel.

Adapted for every kind of power requirements.  
65 to 800 B. H. P.

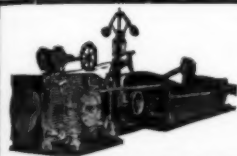
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Also Builders of Ice and Refrigerating Machinery.



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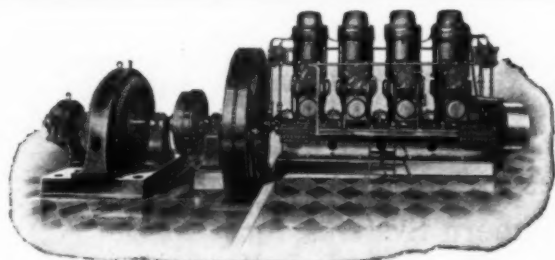
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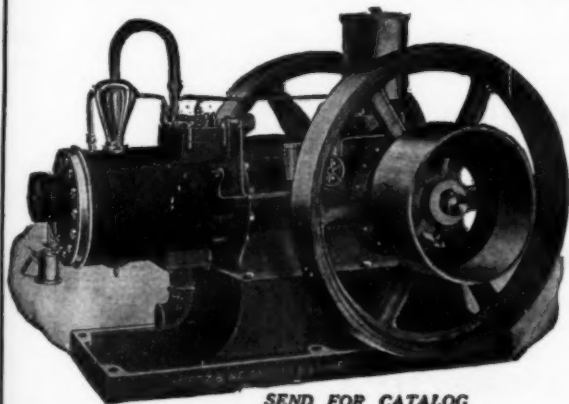
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For Power, Electric Lighting, Pumping and Marine Work  
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Over 250,000 H. P. in Operation

Operate on Kerosene, Distillate, Cheap Fuel Oils, Crude Oils and Alcohol

No Gasoline Used, No Electric Ignition Devices

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### Will Reduce Your Power Bill



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Uses all grades of fuel oil.

Always ready for immediate service.

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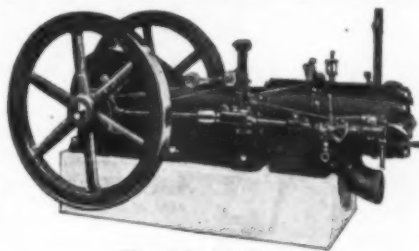
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## "Giant" Fuel Oil Engine

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10 H. P. for 3c. Per Hour  
Cheaper than Electricity  
Better than Steam



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**WILL RUN ON** Crude Oil, Fuel Oil, Engine Distillate, Residuum, Kerosene, Alcohol, Naphtha, Solar Oil, Gasoline.

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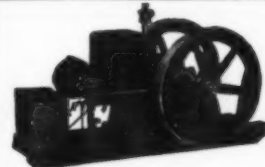
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offers the most economical power for small plants.

Built in sizes—10 to 50 H. P.

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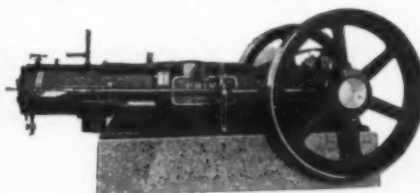
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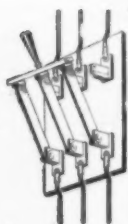
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**R**UNS on any fuel that any internal engine will run on successfully and on fuel that most manufacturers say is impossible.



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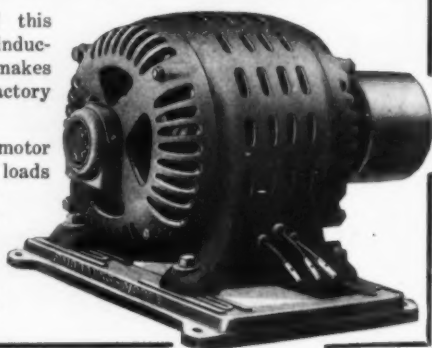
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The simplicity of this internal-starter induction motor is one feature that makes it especially desirable for factory service.

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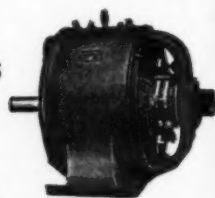
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They are built especially for use in factories. Speed variation to suit all conditions of work can be obtained by the movement of a handle.

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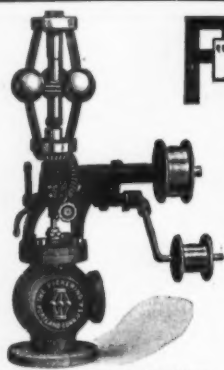
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installed in one corner of a tool house on a farm, is shown in the accompanying illustration. This farmer, like many others, has a gas engine which he uses to run a counter shaft with which he operates a feed grinder, grind stone, etc. On this shaft is also belted the generator of a "Myray-Exide" Electric Lighting Plant Unit, and while he is grinding feed or doing other work with his engine, he also charges the storage battery of the Unit.

When the engine is not running, the battery furnishes current for electric lights, thus giving a full 24 hour electric service by only an occasional operation of the engine.

"Myray-Exide" Units make it easy for anyone not within reach of a Central Station to have his own electric plant. These plants are easy to install, easy to operate, perfectly safe and inexpensive.

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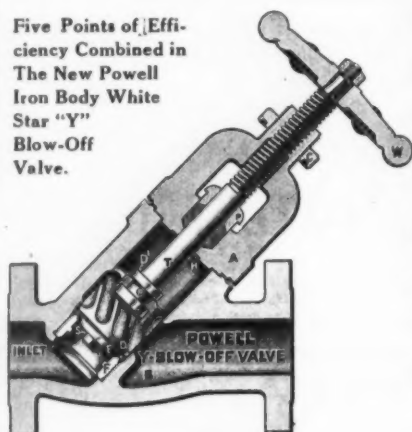
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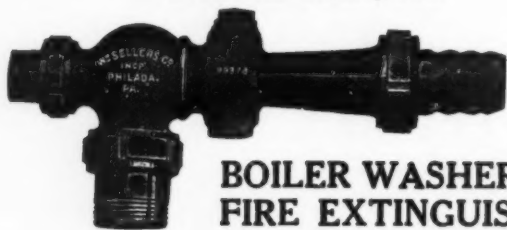
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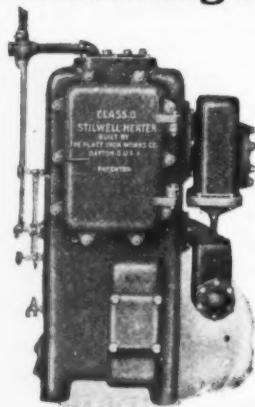


### BOILER WASHER and FIRE EXTINGUISHER

Can be attached to Locomotive.

SELF-ACTING INJECTOR The only injector for Lumber Mills and Logging Roads

## A Saving of 15 to 50% in Fuel



where hard and impure water is used and 10% where soft water is used can be effected by installing a

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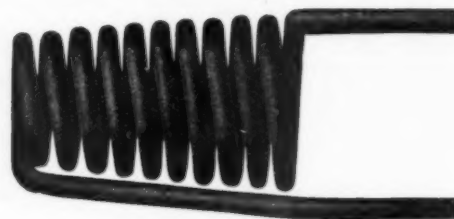
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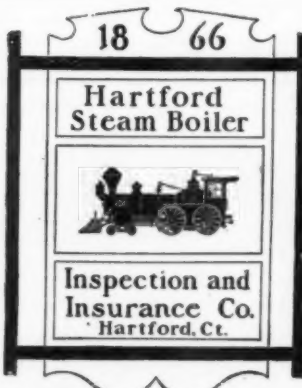
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Total cost of investment, \$833.00.

Steam increased from insufficient to pull the bottom of the mine without shutting down a portion of the washer,

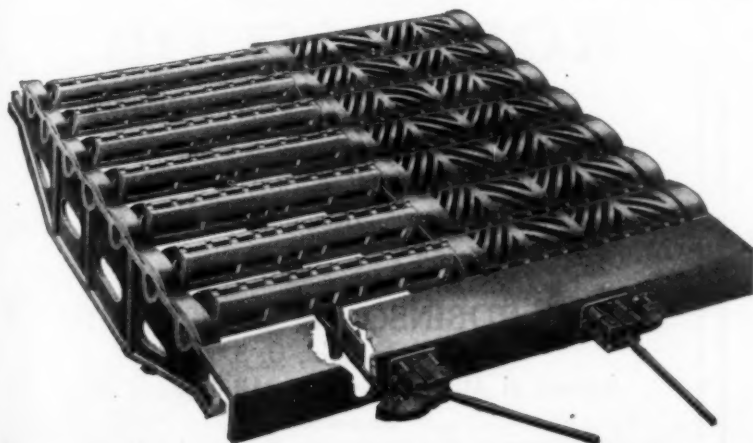
to ample supply for all purposes.

Labor for both firing and cleaning reduced to the minimum.

Saved in four months over common bars, \$700.00, as per following test:

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	Coal Burned.	Coal Mined.		Coal Burned.	Coal Mined.
May, 1913.....	812 tons	7,276 tons	September, 1913.....	722 tons	7,457 tons
June, 1913.....	768 tons	7,013 tons	October, 1913.....	709 tons	7,910 tons
July, 1913.....	722 tons	6,167 tons	November, 1913.....	697 tons	7,935 tons
August, 1913.....	740 tons	6,751 tons	December, 1913.....	680 tons	7,568 tons
Four months.....	3,042 tons	27,207 tons	Four months.....	2,878 tons	30,870 tons
	Fuel Cost per ton, .14			Fuel Cost per ton, .117	

We believe that the above results can be obtained by any user of Thomas Grate Bars in connection with YOLANDE steam coal, either mine run, washed nut or screened form. YOLANDE is the highest carbon coal in the district with the lowest volatile, therefore, with the even distribution of air that your bars allow, will increase the efficiency and give an exceptionally economical operating cost. Our coal analyzes: Fixed carbon 67%, and Volatile 23%, and burning on Thomas Grate Bars will produce almost a smokeless stack."



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Are you using the saving kind or the wasteful? Are you using Albany Grease, getting full value, with absolutely no waste, or are you using oil and paying for a heavy percentage of waste? There can be no doubts in your mind once you've tried Albany Grease, for all bearings will operate cool and easy, with no waste of lubricant. Oil guards, drip pans and drains can be junked, for there is nothing to leak or fly from the bearings. Many concerns have stated to us that the saving Albany Grease produced for them over oil ranged from 40% up.



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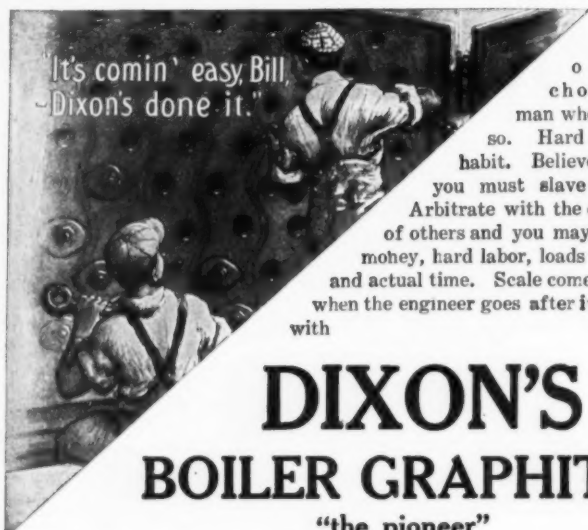


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He who puts DIXON'S on the job "washes out" only once to the other fellow's three or four times. He who prescribes the gentle, easy, mechanical action of DIXON'S saves, in like proportion, the terrific action of the turbine. Break away from harsh chemicals, and don't forget that "it's all in the flakes of DIXON'S BOILER GRAPHITE." No other form of graphite fights the formation of hard scale so persistently and successfully as DIXON'S.



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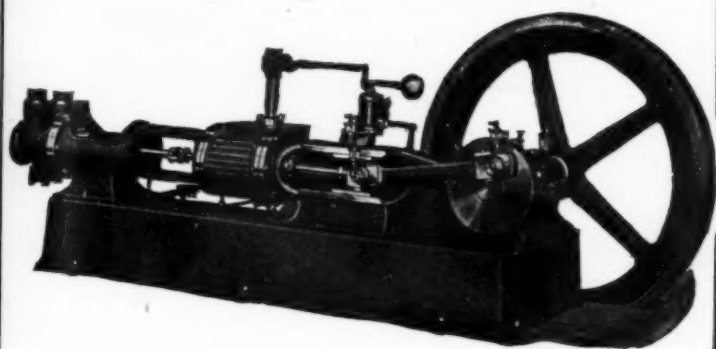
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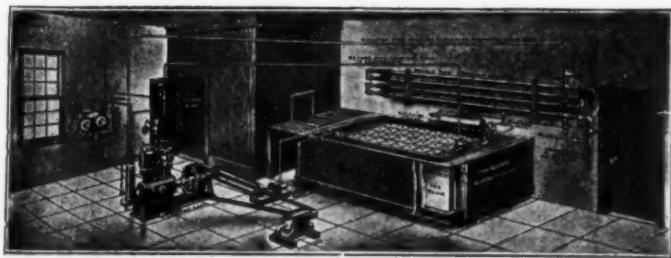
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The fluids that do the work in our Absorption Ice Machine are regulated automatically. Because of this fact, and the machine's notable simplicity, it can be operated by any careful man, and does not require an expert engineer. Some of our users have their firemen operate the machine, besides attending to regular duty. We are ready to answer questions and to explain why the Absorption Machine should be preferred before all others. Our catalogue is free for the asking.

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## CRYSTAL ICE from RAW WATER



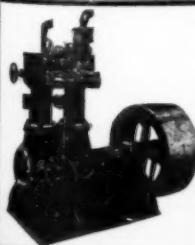
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Sizes from 1 to 10 tons.

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The YORK Sales Organization is the only one of its scope and magnitude in this industry.

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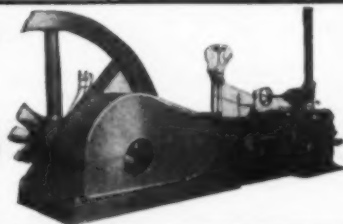
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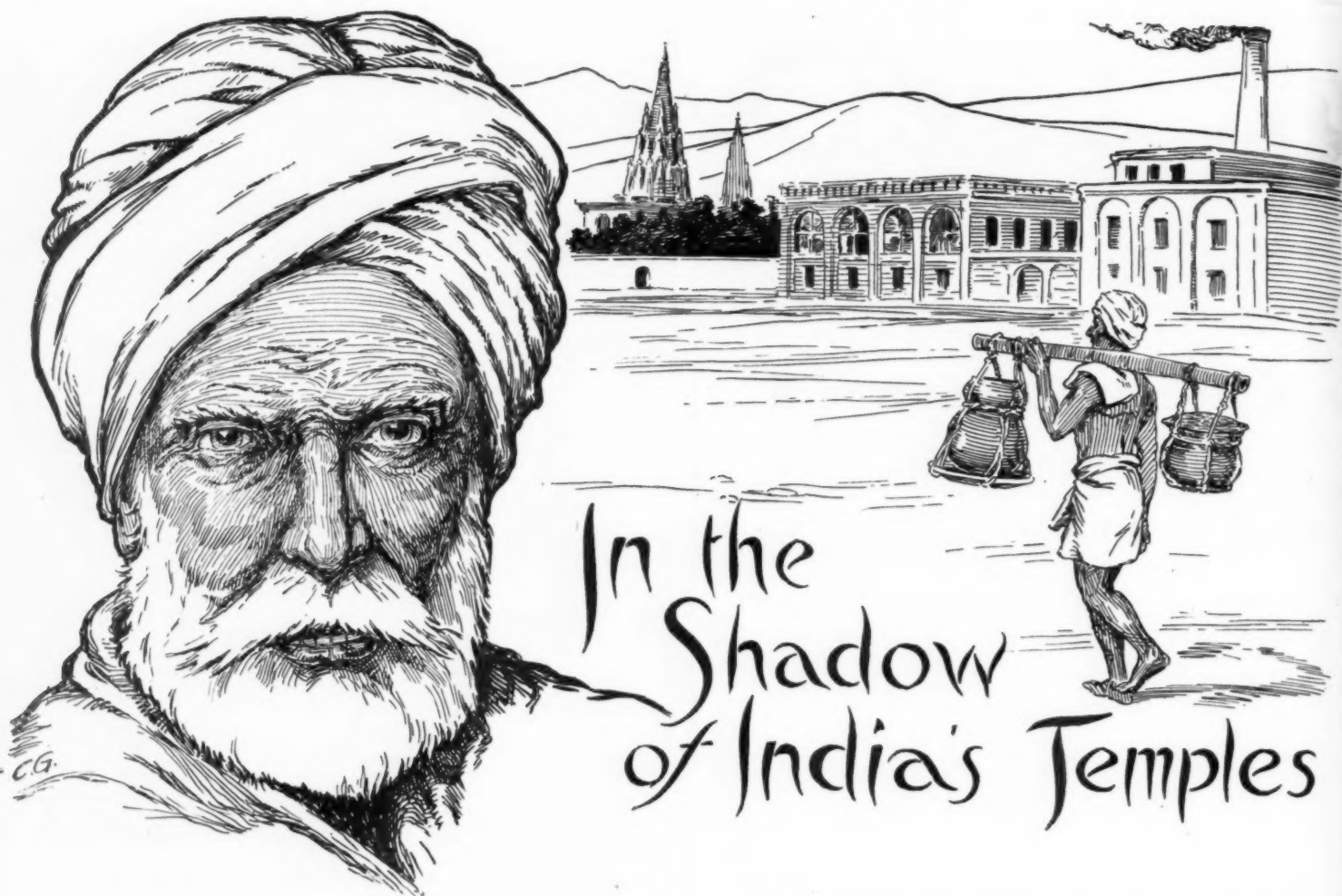
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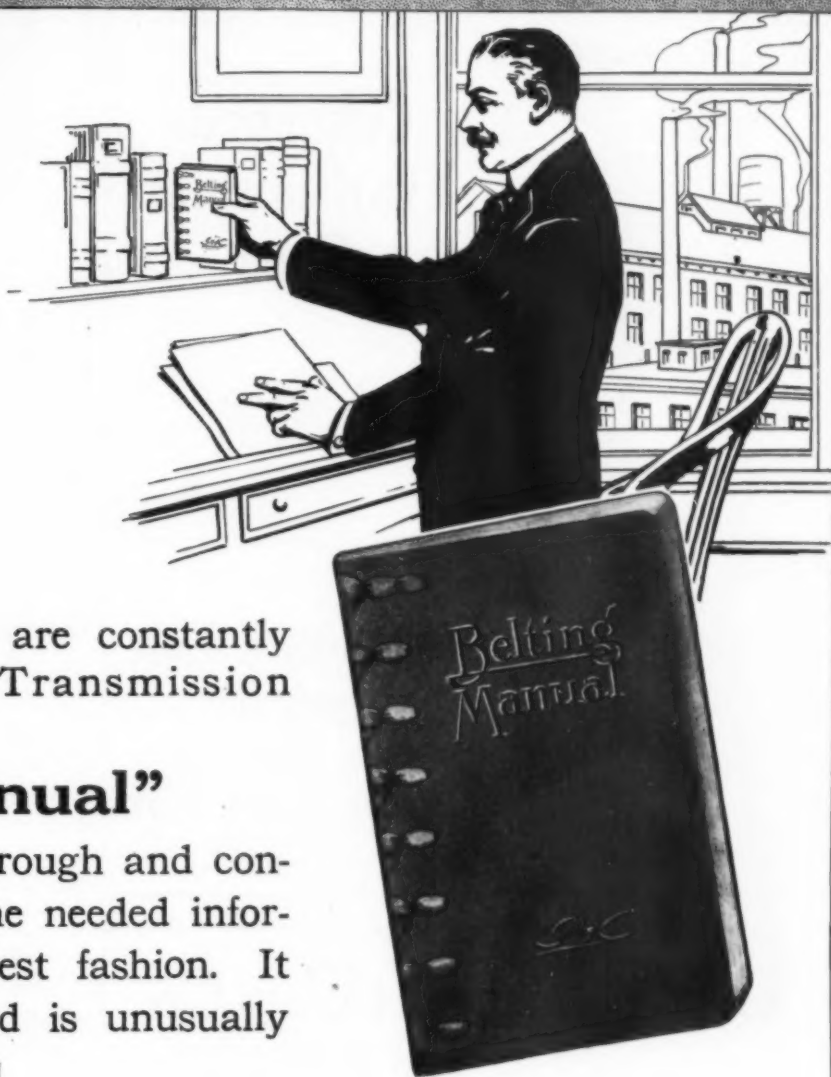
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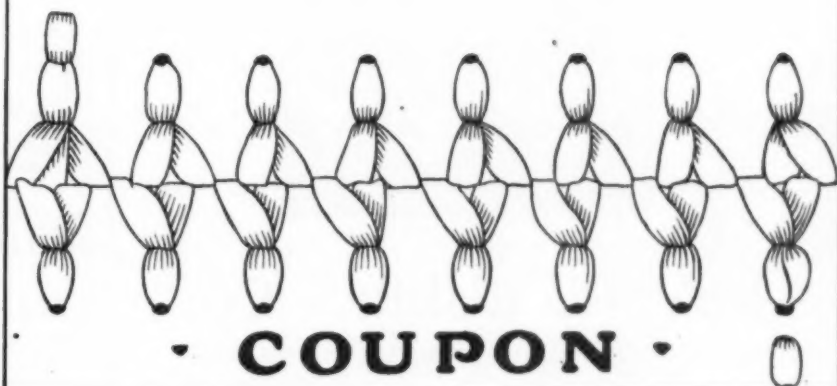
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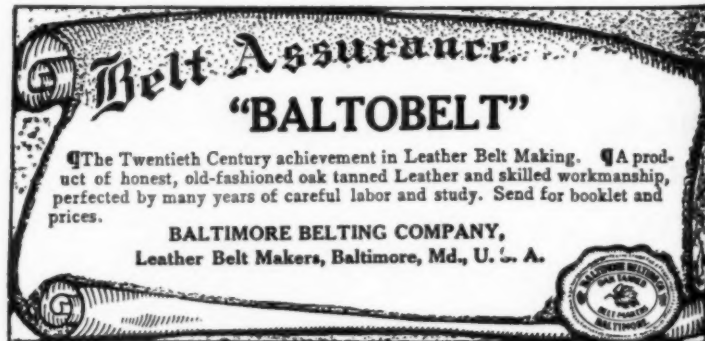
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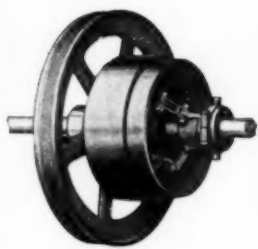
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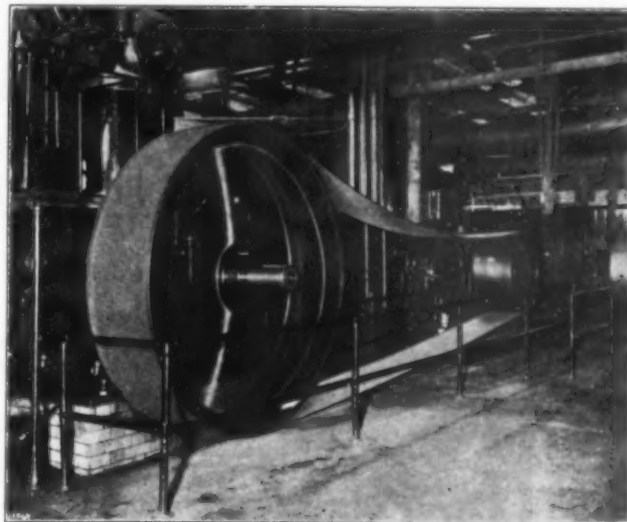
The vital point is to get all the horse-power into your machinery. When you are using inferior Friction Clutches and ones that slip—the kind that are continually shutting down your plant—then you are throwing your money away.

Moore & White Friction Clutches ARE GUARANTEED not to slip and lose power, (all makes are, BUT).

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Write us now about your particular belt troubles.

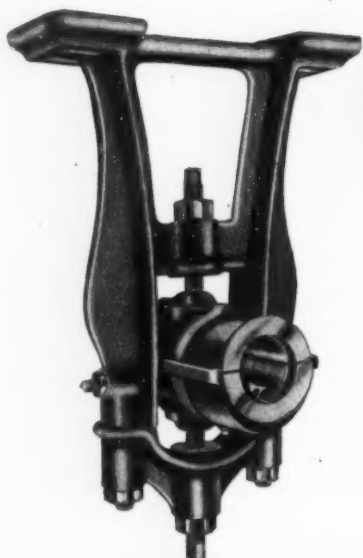
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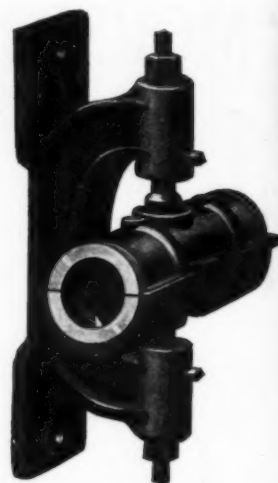
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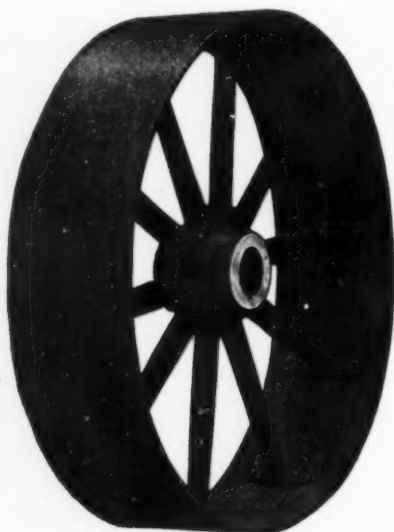
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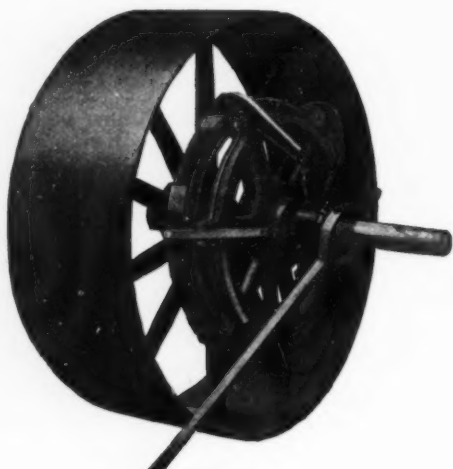


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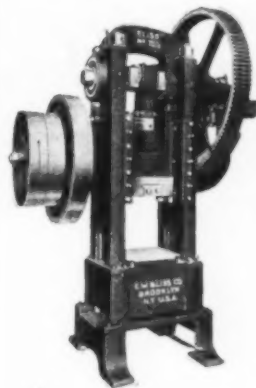
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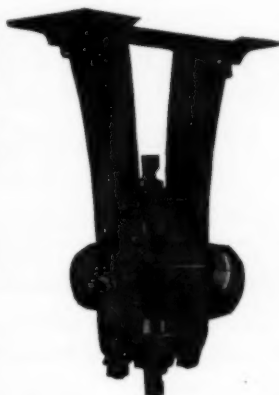
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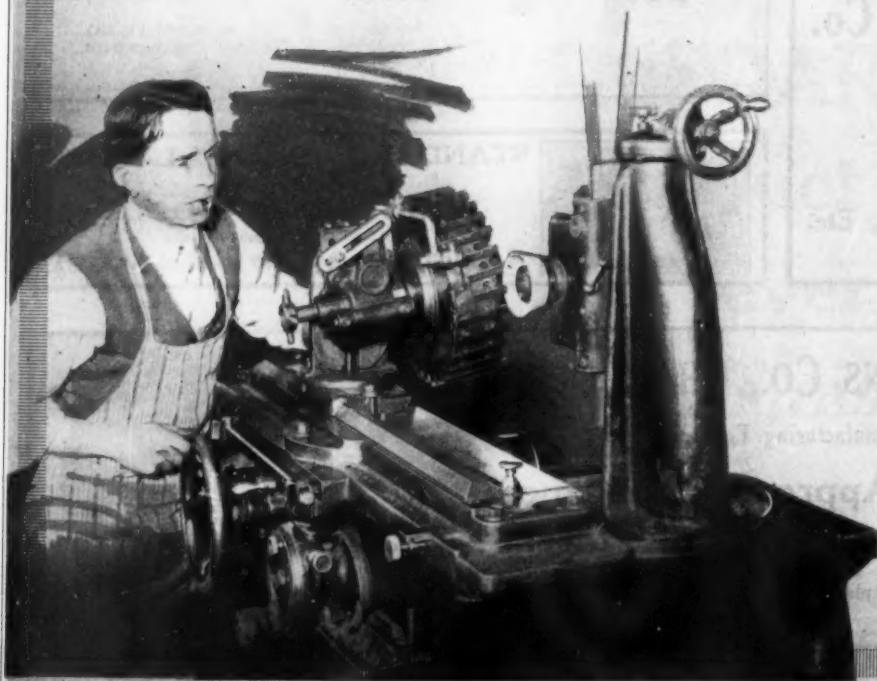
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And **BRAINS** knows a good thing when he sees it.

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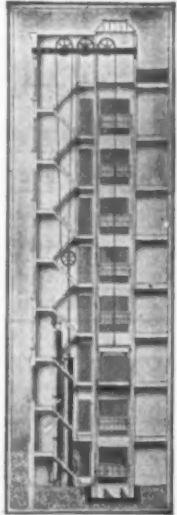
If your front name, middle name or 'hind name was "Brains" you would be smart enough to ketch on, and the first time you had an elevator proposition you would find out what it is all about to



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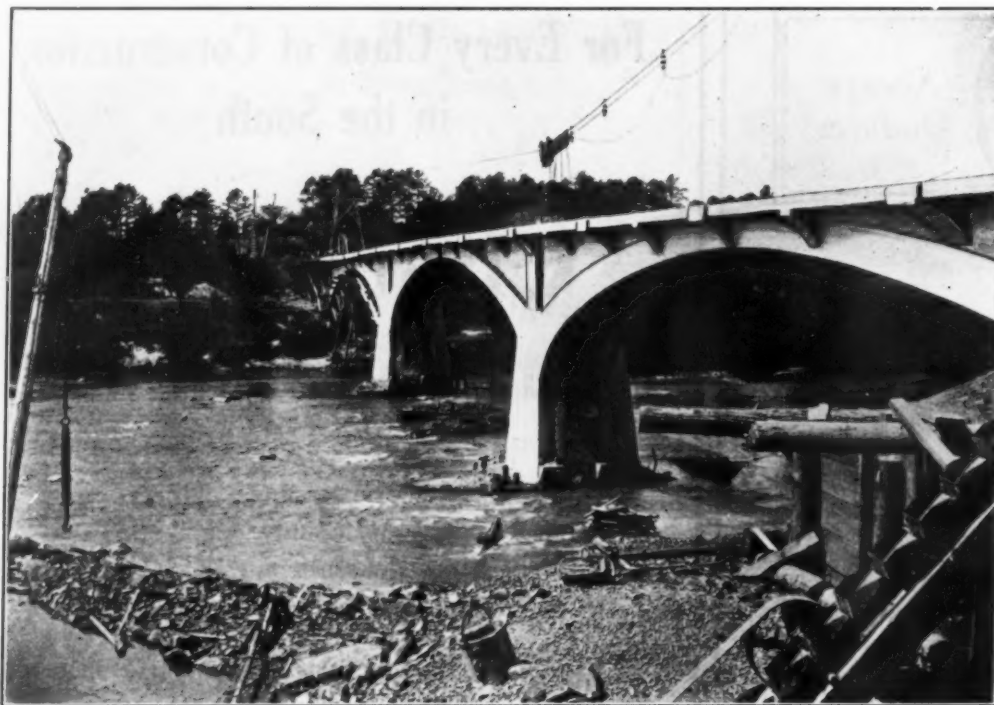
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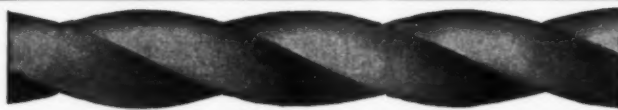
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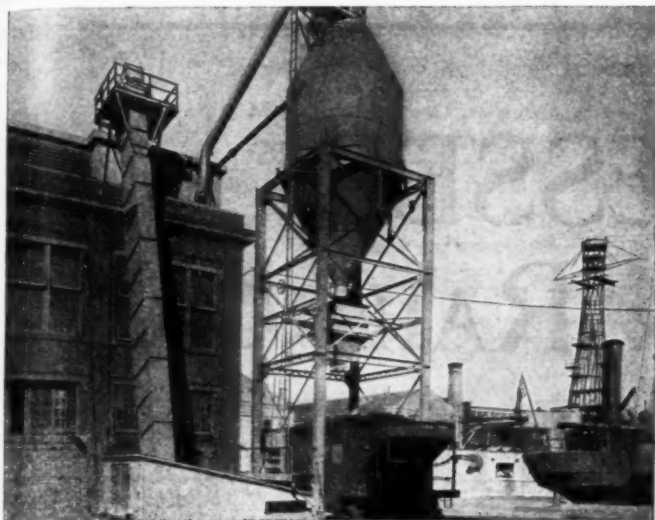
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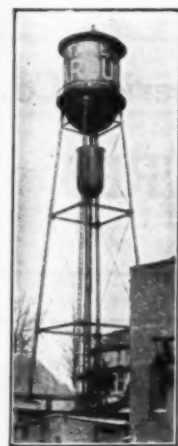
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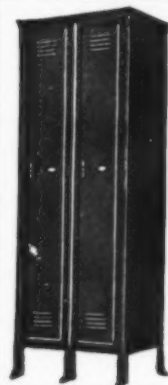
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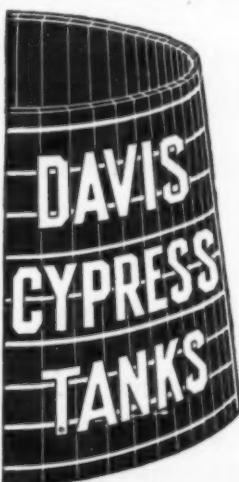
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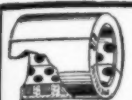
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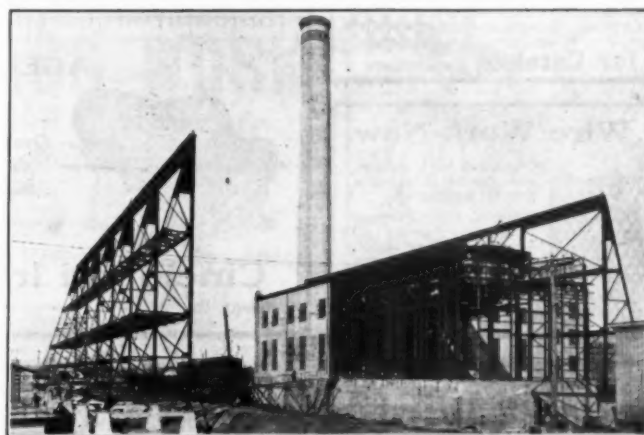
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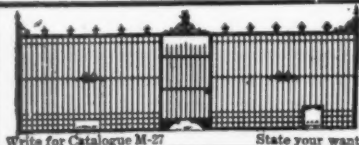
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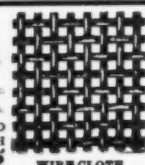
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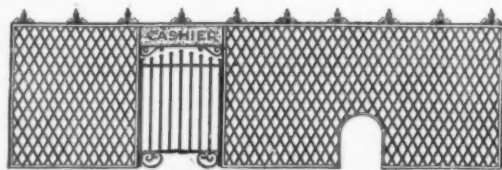
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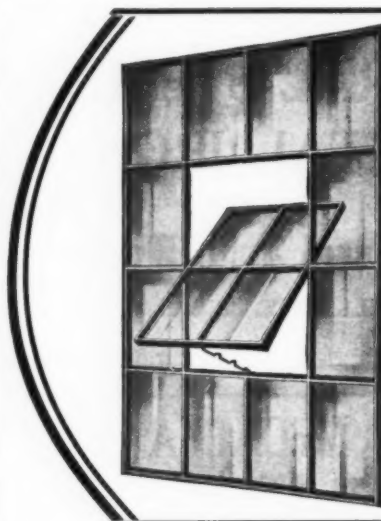
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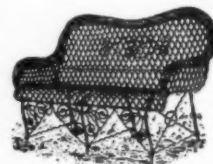
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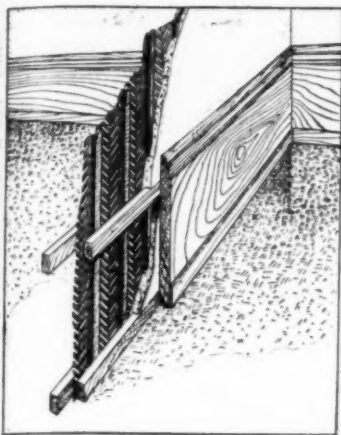
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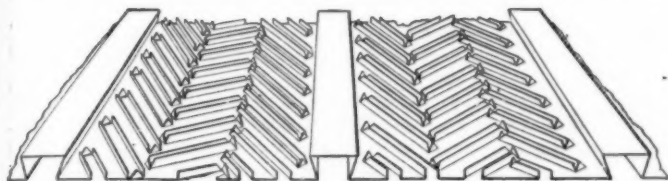




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The World's Largest Manufacturers of Metal Roofing, Metal Shingles, Metal Ceilings, Portable Steel Buildings, Cellular Metal and Keyridge Fireproofing Material.



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Frankly, we don't know just how long Cortright Metal Shingles will last. A great many Cortright roofs put on twenty-five years ago are as good as ever today, and have cost nothing for repairs or replacements.

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No. 1 BLUE

VARIEGATED

VIRGINIA RUSTIC

(In Extra Thickness)

Descriptive booklet sent upon request

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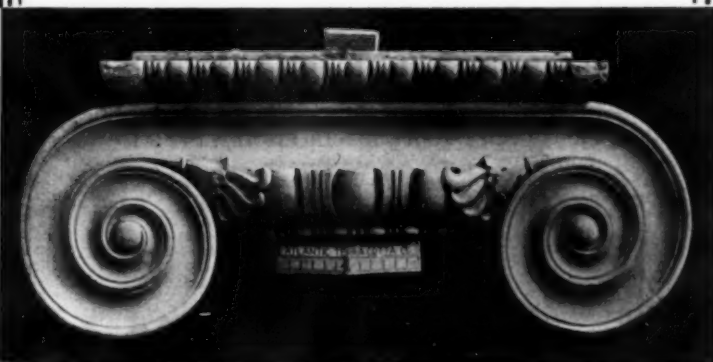
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# Barrett Specification Roofs

## Approved by the Underwriters' Laboratories

THE Underwriters' Laboratories of Chicago investigates and classifies all kinds of building materials for the Fire Underwriters, and the result of these investigations is used in the consideration of insurance rates and classifications.

In main, its reports cover fire hazard, but its investigations also include: durability, strength, practicability, etc., of the product or material tested.

We filed with the Underwriters' Laboratories a set of claims regarding Barrett Specification Roofs and materials.

Their investigation of these claims, covered several years and included a tremendous work in their own testing plant in Chicago and in the field where a large number of old roofs were visited and studied.

Their report substantiates our claims, as will be seen by the following excerpt:

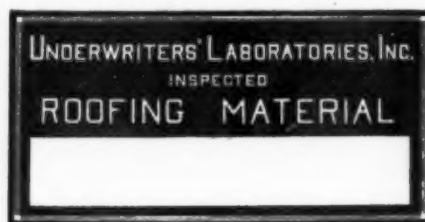
"Their roof coverings (Barrett Specification Roofs) have been shown by tests and investigations at Underwriters' Laboratories to afford a high degree of fire protection to roof deck; to be not readily flammable and not to carry or communicate fire to any material extent; not to slip from position when heated; to possess little or no flying brand hazard; to exert considerable blanketing influence upon fires within buildings; to be durable under service conditions for periods in excess of 10 years; and

to fulfill the requirements for the classification given.

No wonder Barrett Specification Roofs take the base rate of insurance.

Photographs taken after conflagrations and reproduced in the Report show Barrett Specification Roofs with large areas still intact in gutted buildings, constituting, with brick walls and large charred timber, the sole survivors of the fires.

We have accepted the inspection service of the Underwriters' Laboratories at our factories for regular testing of the materials for these roofs as to quality and weight of Barrett Specification Tarred Felt and Barrett Specification pitch, and henceforth these materials will carry the Underwriters' Laboratories label in addition to our own Specification label.



*A copy of The Barrett Specification, with roofing diagrams, also complete report of Underwriters' Laboratories mailed free on request.*

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New York	Chicago	Philadelphia	Boston	St. Louis	Cleveland	Cincinnati	Pittsburgh
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THE PATERSON MFG. CO., Limited:		Montreal	Toronto	Winnipeg	Vancouver		
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*"Like a Stone Wall to Rust & Corrosion"*

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Carefully analyze a galvanized sheet of Portsmouth Iron and you have the answer. If it be the body, the annealing, the rolling, the pickling, the galvanizing—and lastly the service it gives, then

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Portsmouth Works

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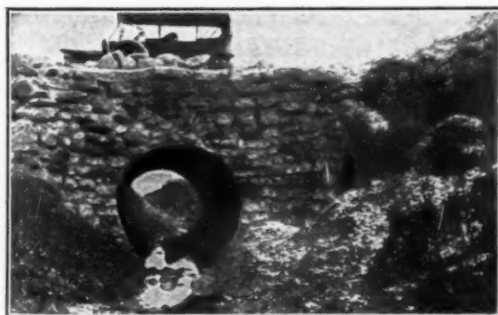
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Mine-Run Screenings for Concrete and Road Construction  
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## Nine Years Neglected— Then Years of Usefulness

After nine years of neglect, during which time it lay in a barn yard, *this culvert* made of

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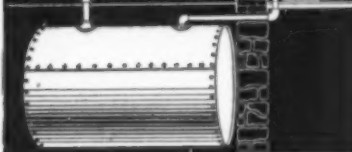
was found to be in perfect condition. It was placed in its present position in a country road July 1914, and is absolutely certain to give years of service. Just another proof of the enduring quality of Apollo Best Bloom Galvanized Sheets.

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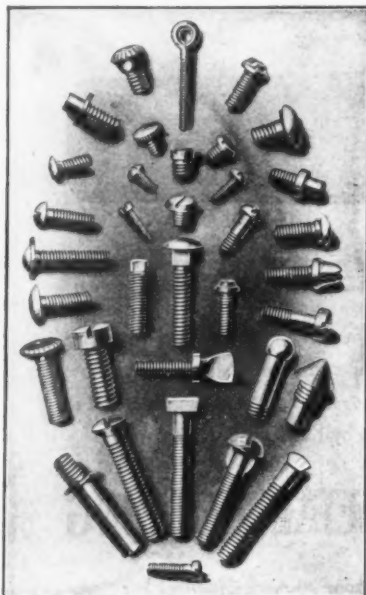
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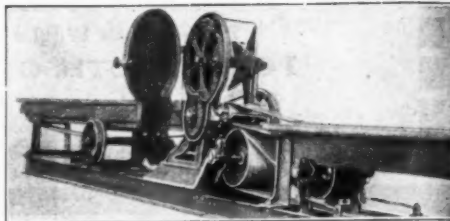
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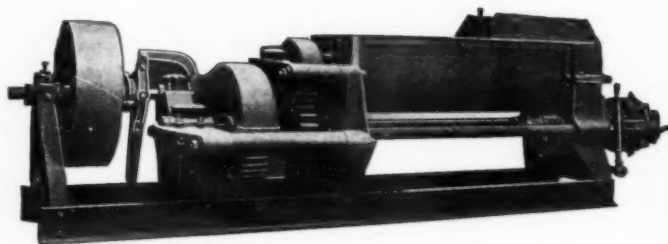
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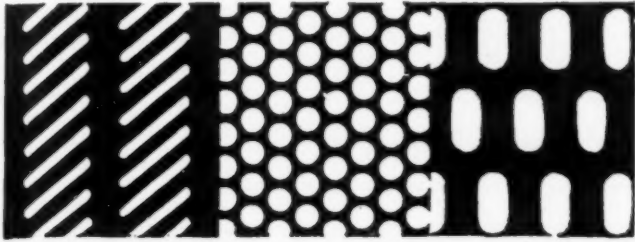
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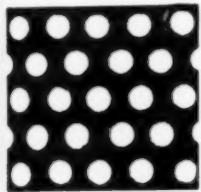
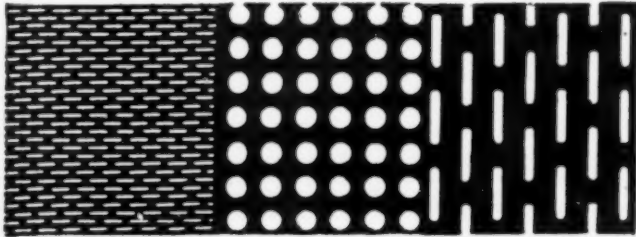
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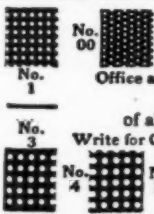
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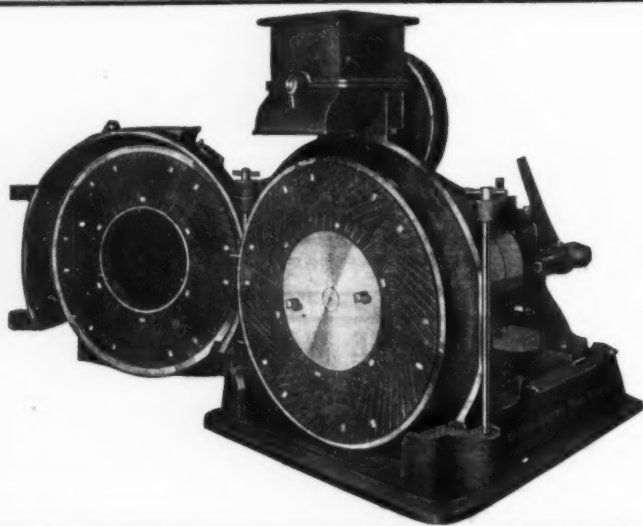
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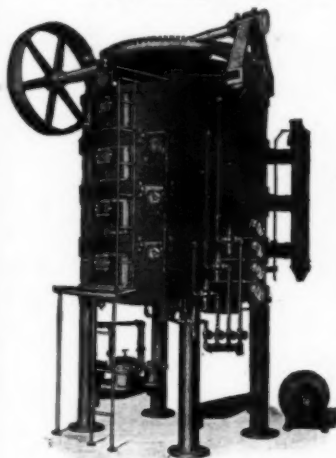
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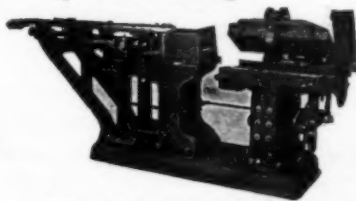


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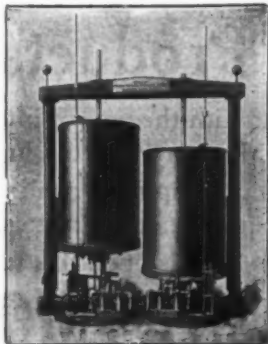
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**The KEMP  
Automatic Gas System**

is the latest, most revolutionary step in the art of applying gaseous fuels for mechanical and industrial purposes, making possible the heating of appliances and equipment used in the manufacture of such staples as copper and steel sheets, tin cans and canned goods, cotton and woolen fabrics, etc., with a consumption usually of less than half the amount of gaseous fuel that is ordinarily required.

If interested to obtain a more efficient and the most economical fuel gas service, address



405 East Oliver Street  
BALTIMORE, MD.

Manufacturers Record, the Medium for Machinery Advertisements.

**Making Better Products Commercially Possible**

Nearly every manufacturer is familiar with the type of inventor who has a method "for improving the quality of a product"—without regard to **cost**. Most anybody can improve things when told that cost is no object.

Improved quality at the **same or a lower cost of production** however is quite another matter.

It is upon this latter sort of record that the success has been proven of the

**RAYMOND PULVERIZING-AIR SEPARATING SYSTEM**

Consider for instance the demonstrated efficiency of the Raymond System of  
**Pulverizing Coal for Fuel**

Very fine pulverization is the prime requisite in this product and that can be secured by many methods. But it cannot be secured by any other known means as **cheaply** as by the Raymond System.

In the production of

**Hydrated Lime**

the elimination of impurities is the great problem. This can be done in other ways but in none so **cheaply** as with the Raymond System.

And this record in general is true of nearly all the 75 different kinds of materials, for which the Raymond System has **proven** its efficiency and economy. Ask for our book.



**Raymond Bros. Impact Pulverizer Company**  
1304 No. Branch Street, CHICAGO, ILL.

Please send us your book on Modern Methods of Pulverization.

NAME.....

STREET.....

CITY.....STATE.....

SEND FOR THE



**RAYMOND  
BOOK NOW**

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors. Send for the Book.



# FIRE CLAY GOODS

## Flue Linings



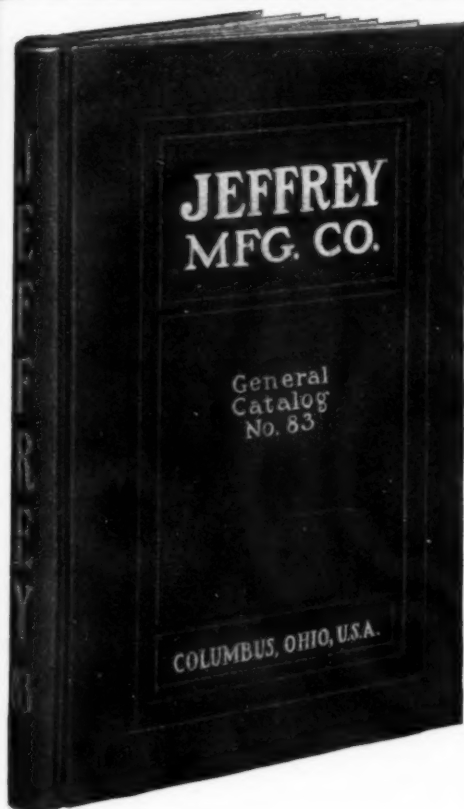
We manufacture a superior quality of fire clay goods, including flue linings, stovepipe, drop bottoms, chime bottoms, hoods, latest pattern chimney tops, etc.; also dry milled fire clay in bulk or sack.

*Write for catalog and prices*

**Southern Sewer Pipe Company**

**BIRMINGHAM, ALABAMA**

## Fire Clay Stovepipe and Fittings



Use this  
book as  
your  
guide in  
preparing  
plans for  
future  
work

**JEFFREY  
GENERAL  
CATALOG  
for 1915**

384 Pages—Illustrating and Describing our complete Line of Elevating, Conveying, Screening, Crushing and Power Transmission Machinery.

*Sent free, upon request, to those interested in Jeffrey PRODUCTS.*

**JEFFREY MFG. CO., 926 N. Fourth St., COLUMBUS, O.**

# AMERICAN SPRINGS

We are thoroughly equipped to handle specifications for all kinds of springs, made to suit the most exacting requirements of elasticity, temper, strength and durability. We make all shapes and tempers, adapted to every use; and with large capacity can deliver promptly.

*Springs Catalogue Furnished Upon Application*

## American Steel & Wire Company

Chicago New York Cleveland Pittsburgh Worcester Denver  
Export Representative: U. S. Steel Products Co., New York  
Pacific Coast Representative: U. S. Steel Products Co.,  
San Francisco, Los Angeles, Portland, Seattle



Write Complete Scale  
Catalogue No. 16.

# "The STANDARD" Scales

**"The Scale Standard"**

represents the highest degree of Strength, Durability, Reliability, High-Grade Construction and Accuracy.

Built in capacities from 1-16 oz. to 200 tons; styles from the smallest even balance to the heaviest R. R. track type.

Universally used by the largest scale users in the world.  
Adapted to the standards of all nations.

## The Standard Scale & Supply Co.

243-245 Water St.

PITTSBURGH, PA.

BRANCHES: BALTIMORE CHICAGO CLEVELAND PHILADELPHIA CINCINNATI ST. LOUIS NEW YORK

## BUILD A BUYING GUIDE

---

**I**T pays big dividends in plant economy and efficiency to know when, where and how to buy.

A wise plan of gathering such information is to preserve your copies of *Manufacturers Record*. This can be easily done by merely filing each copy in a cabinet, on shelf, or in desk after you have read it.

The advertising section of the *Manufacturers Record* is a market-place for business men. It might well be likened to a street containing the window displays of machinery, building accessories and material, factory supplies, tools, raw products, machinery parts, railway equipment, industrial opportunities, road and paving materials and machinery, banks, etc., with a spice of "Professional Cards," "Bargains in Machinery and Supplies," "Contractors Equipment and Supplies," etc.

Much of the information given in the advertisements in this section has been thoughtfully worked out by the advertiser and does not appear in his printed literature. *It is information which has a permanent value.*

At some future time you will be in the market for something—for example, we'll say a pump. Before you buy this pump you will desire to post yourself, thoroughly, on the merits of the different

pumps in the market—at least, this is the way to buy efficiently. But at the same time you will not want to spend a lot of time with salesmen. You will prefer to bring the matter of choice down to a selected list of manufacturers.

It is then a simple matter to turn to the classified index of advertisements among the last pages of *Manufacturers Record*, where a list of manufacturers of pumps is given. And next, to turn to the alphabetical index opposite the inside back cover, where you can quickly determine the page on which the advertisements of these manufacturers are printed.

You can thus select the pumps which are more likely to be suited to your use, and either write to the manufacturer for literature or a salesman.

This kind of buying is a guard against snap judgment.

It enables you to meet the seller with a general knowledge of the merits of his pump and of competing pumps.

It bases your decision on intelligent thought.

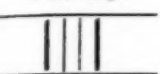
\* \* \* \* \*

And be sure to tell the manufacturer where you saw his advertisement. He is as anxious to learn this information as we are to have you give it to him.





Joist Hangers

Steel & Malleable  
Post CapsSteel & Malleable  
Post Bases

Wall Boxes

Steel & Malleable  
Wall Plates

Wall Anchors



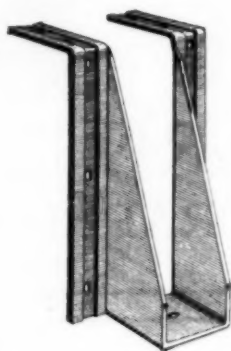
Wall Plugs



Floor Plugs

Steel  
Cross-Bridging

## Van Dorn Joist Hangers are Dependable



Dependability in a word embodies correct design and right methods of production in conjunction with **service**.

A stock of 60,000 hangers permits us to make immediate shipments on the largest of your requirements.

Catalogue No. 81 and supplementary folders give detail information on

Van Dorn Building Material Specialties  
Manufacturers of

Metallic Furniture, Steel Prison Work

Structural Steel and Ornamental Iron

Iron Fencing

Joist Hangers and Post Caps

**The Van Dorn Iron Works Co.**  
Cleveland, Ohio



No matter what the purpose is for which you need a fan or blower you can get exactly the right one from anyone of our service stations without an instant's delay.

## Sturtevant Stock Fans

(REG. U. S. PAT. OFF.)

are carried in all sizes at all our warehouses. The line includes Ventilating Fans, High Pressure Blowers, Planing Mill Exhausters, Steel Plate Fans, Fans for Forced and Induced Draft and for thousands of other purposes.



Suppose you put your problem up to our nearest branch office. We have the largest body of trained fan engineers in the world.

**B. F. Sturtevant Company**  
Hyde Park, BOSTON, MASS.

and all principal cities of the world

## The New Agriculture

### WRITE FOR THIS FREE BOOK

FOR 2,000 years most farmers have cultivated only 6 to 8 inches of soil. They have spent millions of dollars adding to these 6-inch-farms plant foods, such as potash, phosphorous and lime, that already lay in the subsoil waiting to be made available.

**Vertical Farming** makes available tons per acre of new plant food, insures abundant moisture, and largely increases crop yields.

**Dr. G. E. Bailey**, Geologist at the University of Southern California, has prepared a reading course of instruction in soils and vertical farming. We have printed it in a well illustrated book. It will be mailed

**FREE ON REQUEST**

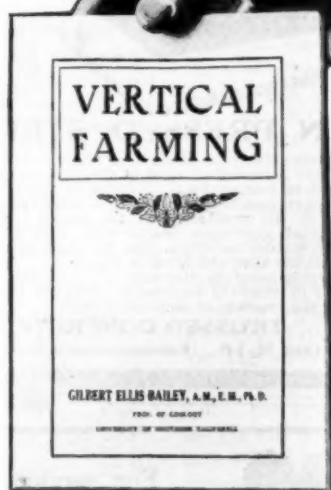
to anyone owning a farm in the United States. Get this book about soils. Work your farm to its full capacity. Know your land. Learn its composition. Use the fertilizers nature is storing beneath your 6-inch farms. Send a postal request today for Vertical Farming Booklet 369-F. Be sure to state the acreage of the farm you own.

**DU PONT POWDER COMPANY**

Pioneer Powder Makers of America

Established 1802

Wilmington, Delaware



## For Users of OXYGEN Immediate Service

through the



**ELECTROLYTIC OXYGEN by the I. O. C. System** is 100% efficient and will do more work in less time, per equal quantity of Oxygen used, than that available from other sources.

### The following companies

operate I. O. C. System Plants for the SALE of OXYGEN or HYDROGEN, and are prepared to fill your orders promptly:

Swift & Co., CHICAGO, ILL.  
Standard Oxygen Co., HOBOKEN, N. J.  
International Oxygen Co., NEWARK, N. J.  
Lever Brothers, Limited, TORONTO, CANADA.  
Portland Oxygen & Hydrogen Co., PORTLAND, ORE.  
Ohio Chemical & Manufacturing Co., CLEVELAND, O.  
Taylor-Wharton Iron & Steel Co., HIGHBRIDGE, N. J.  
Bettendorf Oxygen & Hydrogen Co., BETTENDORF, IOWA.  
Dayton Oxygen & Hydrogen Products Co., DAYTON, O.



**International Oxygen Company**

General Sales Office: 115 Broadway, New York

Works: Newark, N. J.



## When Building Bridges Bear in Mind the Qualities of CONCRETE

**PERMANENT**—No other equal.

**FLOOD RESISTING**—No other can claim this.

**NO MAINTENANCE**—No painting, re-flooring, replacing.

**CAPACITY**—No decrease of capacity with age.

**NOISELESS**—No vibration, loose rivets, bad floors.

**BEAUTY**—No other can attain more.

**THE COST** is governed by the design adopted, the equipment and organization of builder, and local conditions. Ordinarily conditions are favorable to CONCRETE, and it will pay you to investigate. Remember, CONCRETE has its QUALITIES, and the saving in maintenance alone is a deciding factor. **ECONOMY** can be attained only by experienced and specially trained designers, and **BEST RESULTS** by specially equipped contractors. Get our proposal.

**C. W. REQUARTH COMPANY, Charlotte, N. C.**  
ENGINEERS and CONTRACTORS

Operations Confined to the Permanent Class of Structures.

## YELLOW STRAND WIRE ROPE AND AERIAL WIRE ROPE TRAMWAYS



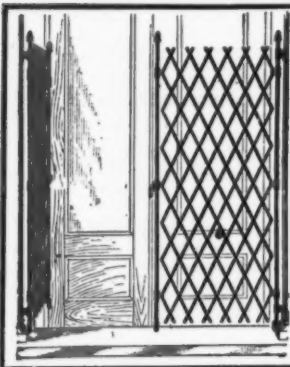
MANUFACTURED BY  
**BRODERICK & BASCOM ROPE CO.**  
809 N. MAIN ST. ST. LOUIS, MO.

## Collapsing Gates

Elevator Cabs and Enclosures  
Ornamental Iron Work

GET OUR CATALOGUE

**Dow Wire & Iron Works**  
LOUISVILLE, KY.



**ROLLING Steel and Wood DOORS**  
**APPROVED FIRE DOORS**  
**THE KINNEAR MANFG. CO. COLUMBUS, O.**

# NICHOLSON

"ALL THERE IS TO SAY ON A FILE"

For half a century NICHOLSON Files have done the best work, simply because every file is rigidly tested for soundness, temper and cutting qualities before it is boxed and sealed.

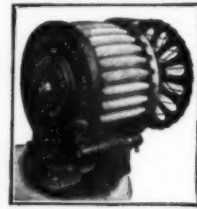
Sold by all leading dealers.

FOR YOU—A fifty years' education on Files in an hour.  
Read our booklet "FILE PHILOSOPHY."  
Sent FREE on request.

**NICHOLSON FILE CO., Providence, R. I.**

## NORTHROP LOOMS

TRADE MARK REGISTERED



**EARN** More Wages for the Weaver  
Larger Dividends for the Mill  
**DRAPER COMPANY**

HOPEDALE, MASS.



## SEWER PIPE

SANITARY—ECONOMICAL—PERMANENT

27", 30", 36" and 42", or any other size

**BLACKMER VITRIFIED  
SEWER PIPE**

is treated of in our publication—"Deliverance From Plague." It is a handsome booklet. Every sanitary engineer should have a copy. Mailed for the asking.

**BLACKMER & POST PIPE CO.**  
Wainwright Bldg. ST. LOUIS, MO.

## STRUCTURAL IRON WORKS

Foundry and Machine Shops

**GRAINGER & CO., Inc.** ESTABLISHED 1888 Tenth St., Louisville, Ky.



**Multiple Houses  
of Pressed Steel and Stucco**

For mines, industrial plants, etc., and wherever a number of houses of similar design are desired, such groups can be built—fireproof, permanent, indestructible and at low cost—by means of

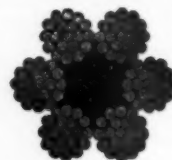
## KAHN PRESSED STEEL CONSTRUCTION

Inflammable wood joists and studs are replaced by all steel members, cut to length and requiring no work at the building site. They are erected without riveting, punching or bolting, by a perfected standard connection. The only tool required is an ordinary hammer. Hy-Rib steel sheathing is quickly attached by bending down prongs on the members, and the stucco, plaster or concrete applied. Thus the principle of skyscraper construction with all its advantages is at last made possible for smaller buildings. Yet the cost compares favorably with that of wood, and only half the time and labor is required.

Complete erection diagrams are furnished so that the buildings are quickly constructed by ordinary mechanics. Detailed suggestions furnished to persons contemplating the erection of multiple houses.

**TRUSSED CONCRETE STEEL COMPANY**

Department M-16 (Representatives in Principal Cities) **YOUNGSTOWN, OHIO**



For service on cranes, derricks,  
steam shovels and dredges, and  
for mine and other haulages, order

## Roebling Wire Rope

Made first in 1840, its manufacture has been conducted ever since without interruption.

**John A. Roebling's Sons Co.**  
ATLANTA, GA. TRENTON, N. J.

